Published every Saturday by the Simmons-Boardman Publishing Company, 34 North Crystal Street, East Stroudsburg, Pa., with executive offices at 30 Church Street, New York.

All communications should be addressed to the New York Office, 30 Church Street

EDWARD A. SIMMONS, *President*
LUCIUS B. SHERMAN, *Vice-Pres.*
HENRY LEE, *Vice-Pres.*
SAMUEL O. DUNN, *Vice-Pres.*
CECIL R. MILLS, *Vice-Pres.*
FREDERICK H. THOMPSON, *Vice-Pres.*
ROY V. WRIGHT, *Sec'y*
JOHN T. DEMOTT, *Treas.*

CHICAGO:
105 West Adams St.
WASHINGTON:
17th and H Streets, N. W.
CLEVELAND:
Terminal Tower
SAN FRANCISCO:
215 Market St.

Editorial Staff

SAMUEL O. DUNN, *Editor*
ROY V. WRIGHT, *Managing Editor*
ELMER T. HOWSON, *Western Editor*
H. F. LANE, *Washington Editor*

B. B. ADAMS
C. B. PECK
W. S. LACHER
ALFRED G. OEHLER
F. W. KRAEGER
E. L. WOODWARD
J. G. LYNE
J. H. DUNN
D. A. STEEL
R. C. AUGUR
R. A. DOSTER
JOHN C. EMERY
MARION B. RICHARDSON
L. C. GURLEY
H. C. WILCOX
R. S. KENRICK
NEAL D. HOWARD
F. M. PATTERSON
RICHARD W. BECKMAN
LLOYD GEORGE
CHARLES LAYNG
GEORGE E. BOYD
WALTER J. TAFT
M. L. LEATH

The Railway Age is a member of the Associated Business Papers (A. B. P.) and of the Audit Bureau of Circulations (A. B. C.)

Subscriptions including 52 regular weekly issues and special daily editions published from time to time in New York, or in places other than New York, payable in advance and postage free; United States, Mexico and Canada, $6.00. Foreign countries, not including daily editions $8.00.

Subscriptions for the fourth issue each month only (published in two sections, the second of which is the Motor Transport Section) payable in advance and postage free; United States, Mexico and Canada, $1.00; foreign countries, $2.00. Single copies, 25 cents each.

Railway Age

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name Registered U. S. Patent Office.

Vol. 86 June 8, 1929 No. 23

In this Issue

The Boston & Maine Installs Centralized Control To Increase Track Capacity ..... Page 1316

M. J. Casey, signal inspector of this road, tells of train operation by signal indication in either direction on both tracks of busy double-track line.

How New York Is Eliminating Its Grade Crossings ... 1319

A study of the laws and policies of that state which are bringing about unusual progress in elimination work.

Frisco Scrap and Reclaim Plant a Money Saver 1325

A description of this road's plant at Springfield, Mo., which employs three hundred men and does imposing business yearly.

EDITORIALS

Speeding Up Trains 1313
A New Station or a Remodeled One? 1314
A Judgment by the Opponent's Attorney 1314
Locomotive Condition and Its Effect on Fuel Economy 1315
1928 Freight Car Order Total Already Surpassed 1315

GENERAL ARTICLES

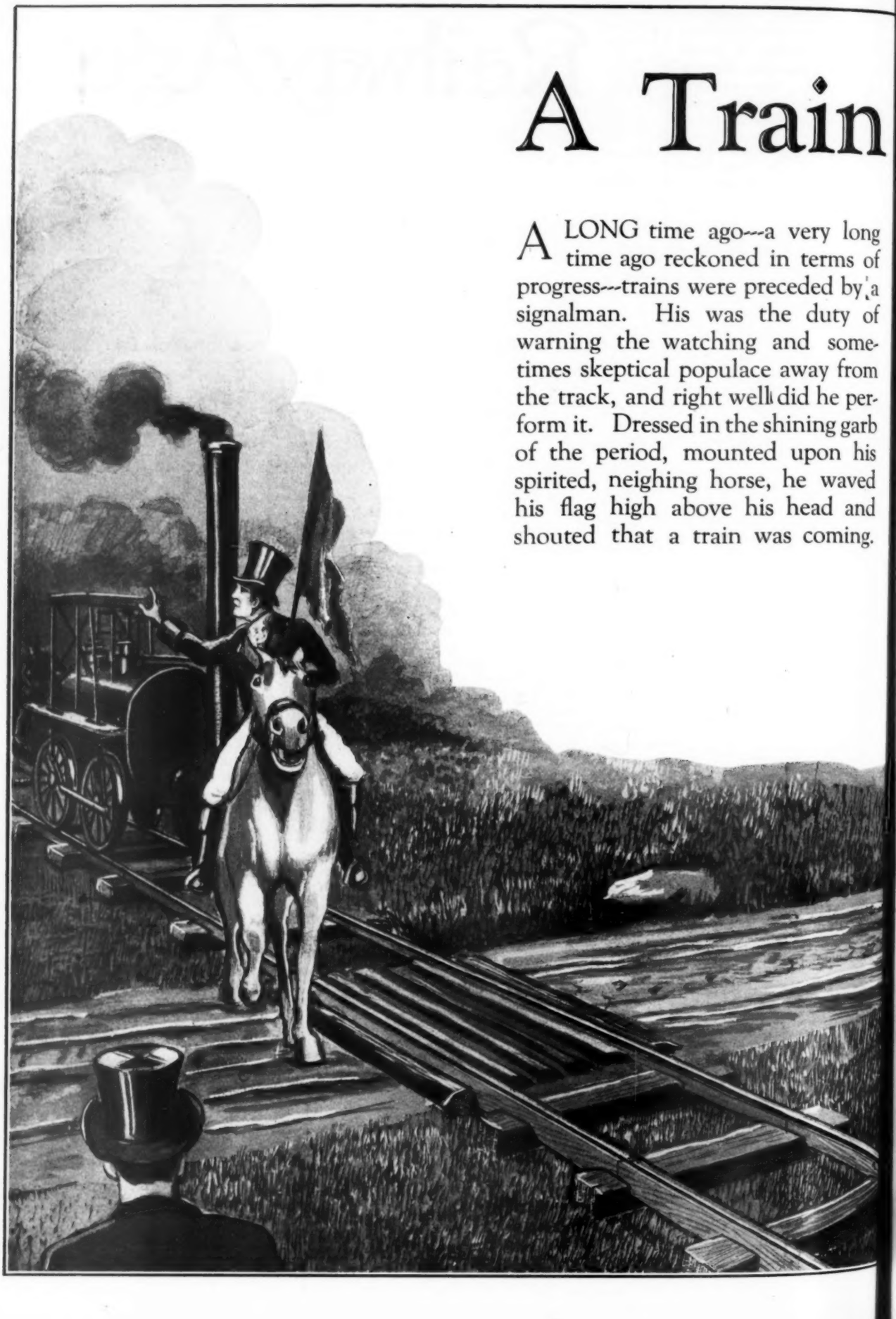
The Boston & Maine Installs Centralized Control To Increase Track Capacity, by M. J. Casey 1316
Proposed B. & O. Acquisition of C. I. & L. 1318
How New York Is Eliminating Its Grade Crossings 1319
Frisco Scrap and Reclaim Plant a Money Saver 1325
Transportation Division Meets in Chicago 1329
Freight Car Loading 1330
Erie Inaugurates 25-Hr. New York-Chicago Passenger Service 1331
Diversified Farm Production Stressed at A. R. D. A. Meeting 1333
How to Apply Rail Motor Cars Successfully, by Charles O. Guernsey 1335
Cotton Belt Prepares to Reduce Operating Expenses 1337

LOOKING BACKWARD 1338
COMMUNICATIONS AND BOOKS 1339
ODDS AND ENDS OF RAILROADING 1340
NEWS OF THE WEEK 1341

The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service

A Train

A LONG time ago—a very long time ago reckoned in terms of progress—trains were preceded by a signalman. His was the duty of warning the watching and sometimes skeptical populace away from the track, and right well did he perform it. Dressed in the shining garb of the period, mounted upon his spirited, neighing horse, he waved his flag high above his head and shouted that a train was coming.



Railway Age

Vol. 86, No. 23 June 8, 1929

Table of Contents Appears on Page 5 of Advertising Section

Speeding Up Trains

EFFECTIVE tomorrow (June 9) the running time of the fastest trains between Chicago and points on the Pacific coast will be reduced five hours. The shortest time from Chicago to San Francisco and Los Angeles will be reduced from 63 to 58 hours; from Chicago to Seattle from 68 to 63 hours, and from Chicago to Portland from 68 to 62 hours and 45 minutes. Five years ago the running time of the fastest trains from Chicago to California was about 68 hours, and from Chicago to the north Pacific coast, 70 hours. The changes made tomorrow will, therefore, result in the best time between Chicago and points on the Pacific coast becoming from 7 to 10 hours less than five years ago.

These changes are illustrative of almost innumerable increases in the speeds of through passenger trains which have been made in all parts of the United States within recent years. In the accompanying table are given figures showing the distances traveled by the fastest trains between a number of important cities, their running times under the schedules that were in effect five years ago, and that are (or soon will be) in effect now, their average speeds per hour then and now, and the savings in time between points of origin and destination effected. The data given do not include the highest average speeds made in this country, such as those for the short distance between Philadelphia and Atlantic City. Neither do they include any figures regarding trains between New York and Chicago, because they are intended to illustrate the reductions in running time that have occurred, and the shortest time between New York and Chicago is the same as it was five years ago, namely, 20 hours. This does not indicate, however, that there has been no improvement in service betweeen the country's two largest cities. On the contrary, the time of various trains between New York and Chicago has been reduced by an hour or more, and there are several which now cover the distance in less than 21 hours.

Of course, when the running time of trains is reduced between points long distances apart, it is necessarily reduced between intermediate points. The distances covered by the trains upon whose schedules the statistics in the accompanying table are based range from 272 to 2,272 miles, and as the points of origin and destination mentioned are scattered throughout the country, the facts given show that a very large part of all the communities and people of the country are being benefited by the improvements in passenger service that they indicate. The greatest reductions in running time have been made between large cities in the east and in Florida and on the Pacific coast. Not only will it take 10 hours less under the new schedules to get from Chicago to the Pacific coast than it did five years ago, but it also takes from 5 hours and 10 minutes to 7 hours and 35 minutes less to get from New York or Chicago to the most important winter resort places in Florida than it did then.

There has been some criticism recently in the press of the alleged slow speeds of passenger trains in the United States. A short time ago one newspaper published an editorial entitled, "Thirty-Five Miles an Hour," in which it was charged that this was the average speed of many of the best through trains, and that there had been virtually no increases in speeds for years. The average speed that a train can make depends upon numerous con-

Representative Changes in Passenger Train Schedules, 1924 to 1929

Year	From	To	Mileage	Time	Miles per Hr.	Saving in Time
1929	New York	Jacksonville	1075	25'49"	41.6	
1924	"	"		28'55"	37.2	3'06"
1929	"	Miami	1481	37'05"	40.0	
1924	"	"		44'10"	33.5	7'05"
1929	"	Tampa	1286	31'45"	40.5	
1924	"	"		39'20"	32.7	7'35"
1929	"	St. Louis	1052	24'05"	43.7	
1924	"	"		25'10"	41.8	1'05"
1929	"	Washington	227	4'40"	48.7	
1924	"	"		5'20"	42.5	40"
1929	"	Detroit	690	14'35"	47.3	
1924	"	"		15'10"	45.5	35"
1929	"	New Orleans	1358	36'50"	36.8	
1924	"	"		41'20"	32.9	4'30"
1929	"	Cincinnati	883	18'15"	48.4	
1924	"	"		19'30"	45.3	1'15"
1929	"	Cleveland	620	12'50"	48.3	
1924	"	"		14'35"	42.5	1'45"
1929	St. Louis	San Antonio	1038	26'00"	40.0	
1924	"	"		26'45"	38.8	45"
1929	"	Pittsburgh	612	14'00"	43.7	
1924	"	"		14'48"	40.8	48"
1929	"	El Paso	1358	38'15"	35.5	
1924	"	"		41'10"	32.9	2'55"
1929	Detroit	Cincinnati	272	6'45"	40.3	
1924	"	"		7'35"	35.9	50"
1929	San Francisco	Portland	771	21'55"	35.2	
1924	"	"		26'50"	28.8	4'55"
1929	"	Seattle	956	27'25"	34.8	
1924	"	"		34'50"	27.4	7'25"
1929	Chicago	St. Louis	284	6'30"	43.7	
1924	"	"		7'45"	36.7	1'15"
1929	"	Kansas City	451	11'25"	39.5	
1924	"	"		12'05"	37.3	40"
1929	"	Omaha	488	12'15"	39.8	
1924	"	"		13'20"	36.4	1'05"
1929	"	New Orleans	921	21'00"	43.9	
1924	"	"		22'45"	40.5	1'45"
1929	"	Jacksonville	1127	29'45"	37.9	
1924	"	"		32'30"	34.7	2'45"
1929	"	Miami	1493	40'15"	37.0	
1924	"	"		46'40"	32.0	6'25"
1929	"	Tampa	1365	38'30	35.5	
1924	"	"		43'40"	31.4	5'10"
1929	"	Minneapolis	441	11'25"	38.6	
1924	"	"		12'50"	34.4	1'25"
1929	"	Denver	1034	25'50"	39.8	
1924	"	"		27'25"	37.7	1'35"
1929	"	San Francisco	2261	58'00"	39.0	
1924	"	"		68'20"	33.0	10'20"
1929	"	Los Angeles	2228	58'00"	38.4	
1924	"	"		68'15"	32.9	10'15"
1929	"	Portland	2272	62'45"	36.2	
1924	"	"		70'00"	32.4	7'15"
1929	"	Seattle	2316	63'00"	36.8	
1924	"	"		70'00"	33.3	7'00"
1929	San Francisco	Chicago	2261	58'00"	39.0	
1924	"	"		67'55"	33.3	9'55"
1939	Los Angeles	"	2230	58'00"	38.4	
1924	"	"		68'30"	32.8	10'30"
1929	Portland	"	2272	61'15"	37.1	
1924	"	"		70'00"	32.4	8'45"
1929	Seattle	"	2316	63'00"	36.8	
1924	"	"		70'00"	33.1	7'00"

ditions, the most important of which is the number of stops it must make. Other things being equal, the longer the distance a train runs the slower its average running time must be because of the greater number of stops it must make and the more numerous uncertainties which must be allowed for. The speed that can safely be made also depends upon the condition of a railway's tracks, the kind of signaling system it has, whether it has a single track or double or multiple track, and so on. A train which is operated upon a single-track line on which both passenger and freight trains are moving in both directions obviously must make more stops than one which is operated upon double track. The average speeds of the fastest passenger trains in eastern territory is greater than the average speeds of the fastest trains in western and southern territory, and this is largely due to the fact that the eastern railways, with their greater densities of traffic, have more double or multiple track lines than railways in other parts of the country.

It is especially essential, if high speeds are to be made with safety, that the tracks shall be in good condition—that they shall, for example, be laid with heavy rail and well ballasted. The reduction of grades and curvature is, of course, conducive to the making of high speeds with safety. The tracks of most American railways have been substantially improved within recent years, and this has been a factor of the first importance in enabling them to speed up their passenger trains.

It will be noted that the slowest speed given for any train five years ago in the accompanying table was about 29 miles an hour, while the slowest speed given for any train at present is 35.2 miles an hour. The fastest time given for five years ago was 45.5 miles, while the fastest present time given is 48.7 miles an hour. The highest average speed of trains between New York and Tampa, Fla., has been increased almost 8 miles an hour. The highest average speed between Chicago and California has been increased about 6 miles an hour.

That the speed of passenger trains in this country can be further increased cannot be questioned; but if this is to be done with safety it must be preceded by constant improvements involving large expenditures.

A New Station or a Remodeled One?

IF competition for bigger and better passenger stations were confined to the large cities, the railways might derive some comfort from the feeling that their great expenditures for such facilities were being made where they would do the most good, namely, at the primary sources of their business in the transportation of passengers. Unfortunately, however, there is almost no town that does not include a new station in its plans for civic betterment, despite the fact that its citizens usually think in terms of the bus or the Buick whenever they contemplate a trip of anywhere from ten to two hundred miles.

To meet the clamors for improvements of this class in the hundreds of towns along its lines, without recourse to expenditures that would lead to bankruptcy, calls for the exercise of tact and ingenuity on the part of the railway's officers. The judicious use of paint, in colors other than "box-car red," has been found to help, but where the demands are more insistent the actual outlay for an entirely new building has often been avoided by the modernization of the old one. The application of brick veneer, a covering of stucco, new floors, the installation of modern plumbing, etc., have been remarkably effective in numerous cases. Attention to maintenance that will insure against shabbiness will go a long way toward disarming the demand for new facilities.

A Judgment by the Opponent's Attorney

THE injustice to a defendant of combining in one person the plaintiff, the prosecuting attorney, the judge, the jury and the executioner seems so manifest as to require scant comment. Yet is not that the situation which a railroad has to face when it desires to bridge a navigable stream? The War Department is charged with the maintenance of navigable channels and its approval must first be secured before bridges designed to cross such channels may be constructed. The authorized defender of navigation, it has no mandate to consider the claims of other forms of transportation, no matter how important they may be in the event that they conflict in the slightest degree with that form of transportation which the War Department is charged to foster. The absurdity of delaying thousands of passengers in trains and automobiles during "rush hours" to permit the passage of lumbering sand scows through drawbridges we have commented upon heretofore.

Another case of similar nature, decided last week, was the disapproval of a plan for a bridge over the Hudson connecting New York and New Jersey. The bridge was designed to serve both railroads and vehicular traffic and the proposed central clearance—175 feet above the water level—would have failed to clear the masts of but a score of vessels. Presumably these vessels, or any which it is likely will be built, could be provided with telescoping masts at small cost, in the event that it should be necessary for them to ascend the Hudson above the site of the proposed bridge—which is doubtful, since few, if any, of the larger vessels dock so far up the river.

The promoters of the bridge project pointed out that to raise the central clearance of the bridge to 200 feet would cost about $20,000,000—which may be compared with the probable slight cost of equipping these few vessels with telescoping masts. Moreover, it was said, the higher clearance would probably result in grades from the bridge to the New York side too severe for any railroad to negotiate. Perhaps there are merits to the War Department's decision which we have overlooked; it is not our intention to state an opinion as to what the decision should have been. Indeed it seems possible that the War Department, knowing its legal responsibility to aid water transportation, may have acted just as it was required by law to do. Rather we desire only to call attention to the injustice to other forms of transportation of forcing them to lay their differences with water transportation before a body which is the authorized public advocate of that form of transportation. Should not the judge in such matters be a body competent and authorized to consider the public necessity of all forms of transportation and to weigh impartially their several claims when differences arise?

The official favoritism enjoyed by water transportation is an anachronism dating back to the days when it was the only method of transportation except that performed by draft animals. To this latter agency it was so obviously superior that its cherishing by the govern-

ment was not to be wondered at. Now, however, newer forms of transportation exist which in many cases have as great or greater right to consideration, from the point of view of public well-being, as water transportation. To the extent that they are unjustly dealt with the public well-being will suffer. How guard against such injustice when the judge to whom they must appeal is also the advocate of their opponents?

Locomotive Condition and Its Effect on Fuel Economy

THE vital relation of locomotive condition, as regards both design and maintenance, to locomotive fuel performance, is generally recognized. It is more than a coincidence, therefore, that the Texas & Pacific, a road notable for having a high percentage of modern power, is rated among the first roads in the country in individual fuel performance and freedom from federal locomotive defects. Fuel economy results on the Texas & Pacific were described in the *Railway Age* of November 17, 1928, page 973. Since then the figures have been rechecked and brought up-to-date, being included in a paper by A. P. Prendergast, superintendent of motive power, presented at the International Railway Fuel Association convention at Chicago last month, as follows: Fuel saving since 1917 in freight service, 47 per cent; in passenger service, 50 per cent; in switching service, 30 per cent.

No more effective argument could be advanced for the modernization of locomotive power and other facilities than that found in Mr. Prendergast's paper wherein he states that the entire management of this road is receptive toward improved and economical appliances that give promise of ultimate benefit. Where the net result is found sufficiently promising, he has urged the application of such devices and improvements to the greatest extent possible with the full knowledge that maintenance of equipment expenses will be increased thereby and that he will be held strictly accountable for such increases. The result is that locomotives on this road are now largely equipped with modern fuel-saving improvements that contribute to reduced fuel consumption and enable the locomotives to operate at their maximum tractive capacity.

That this in no idle boast is evidenced by the fact that this road has retired 148 locomotives since 1917 and in the same period placed in service 165 new modern locomotives designed and fully equipped to meet existing operating requirements at the time of purchase with minimum expense of operation. At the close of the year 1917, the Texas & Pacific owned a total of 353 locomotives whose average tractive power was 26,207 lb., while, at the close of the year 1928, it had 370 locomotives with average tractive power of 49,136 lb. This is an increase of 87.5 per cent, notwithstanding the necessity for maintaining a considerable number of smaller locomotives for branch-line service and for the seasonal handling of heavy sugar cane crops over light-rail tracks in Louisiana during three months of each year. The most notable addition has been the purchase of 55 Texas-type locomotives since 1925. Furthermore, 60 per cent of the switching power now operated by this road has been purchased since 1917; the most recent being eight-wheel locomotives with limited cut-off, ample grate area and heating surface, high piston thrust and maximum horsepower at speeds, producing sustained drawbar horsepower at remarkably low fuel consumption.

This road has also been a pioneer in modernizing its terminals to provide adequate facilities for keeping its motive power in prime condition with minimum terminal delays and reduced terminal fuel consumption. The completion of its new Fort Worth engine terminal marks the fourth project for complete terminal modernization undertaken within the last three years which is to be continued until all terminal facilities have been improved to a degree comparable with the motive power. The effect of this program on locomotive utilization is already seen in the record of this road for locomotive miles per locomotive day, which is surpassed by few railroads in this country. Mr. Prendergast calls attention to a saving of 20 per cent in terminal fuel saving, and a reduction of 35 per cent in the average time of steaming locomotives effected at the new Fort Worth terminal by means of the direct steaming system, and points to the fact that it is cheaper to generate a pound of water to a pound of steam in a modern high-pressure boiler plant at locomotive terminals than in the locomotive boiler itself as a separate unit.

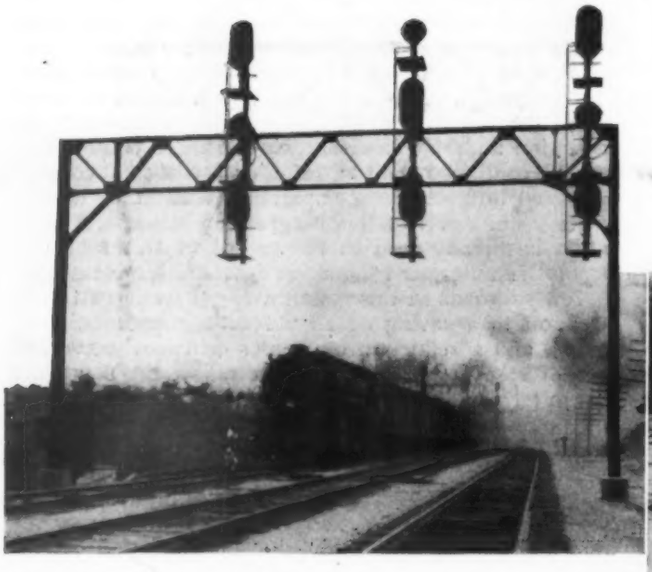
All will agree with Mr. Prendergast that a major responsibility for the accomplishment of fuel economy rests with the mechanical department of the railroads, not alone to design new locomotives but to provide for their proper care and preparation at terminals, in which the entire organization from the highest to the lowest employee is vitally concerned and must be educated and interested to do their part.

1928 Freight Car Order Total Already Surpassed

FREIGHT car orders reported during the first five months of 1929 have surpassed by more than 2,000 the total purchased by the railroads during the entire year of 1928. This total also is the largest for the first five months of any year since 1924. The total number of freight cars reported as ordered in the *Railway Age* up to and including June 1 this year is 53,260, as compared with a total of 51,200 ordered during the 12 months of 1928. Freight car orders for the month just completed totaled 8,364, as compared with 2,377 ordered in the corresponding month last year. Locomotive orders during the month totaled 44, as compared with 52 ordered during May, 1928, bringing the five months' total for this year to 340, as compared with 132 for the same period of 1928.

Passenger car orders showed a decline, with 111 units ordered during the past month, as compared with 210 ordered during May, 1928, bringing the total to date for 1929 to 663, as against orders for 1,094 in the first five months of 1928. In this latter connection, however, it should be pointed out that 1928 passenger car orders did not recede from the normally expected annual total, but were above the 1926 and 1927 figures. Freight car and locomotive buying during 1928, on the other hand, was markedly hesitant, and thus the year's orders were at a low level. The renewed activity in the market for these latter types of rolling stock would therefore seem to indicate that the upturn from the 1928 low point is well under way and that manufacturers may now regard the remainder of 1929 with a greater degree of optimism than has been possible for some time past.

The Boston & Maine Installs Centralized



Eastbound at West End of Siding



Eastbound Train Entering Siding from Left Main

Trains directed by signal indication in either direction on both tracks of busy double-track line

By M. J. Casey
Signal Inspector, Boston & Maine

A 13½-mile double-track installation of the General Railway Signal Company's centralized traffic control was placed in service between North Chelmsford, Mass., and Ayer, on the Boston & Maine, on March 25. Because of the fact that trains from various routes must be run over this section of line without delay, the greatest possible flexibility of train movements is required. The centralized traffic system was, therefore, installed so that train movements can be directed in either direction on either track by signal indication. No train orders are required and train orders and rights by class and direction have been eliminated. All signals and power switch machines are controlled by the train director in charge of the centralized machine who is located in the tower at North Chelmsford.

Annual Saving $37,847

As this new signaling system will eliminate the stopping of trains for orders and reduce delays at meeting points, as well as those caused by the bunching of trains and by yard engine interference, it is estimated that the new arrangement will show a yearly saving of $37,847.

This section of line traverses a slightly rolling country. Curves are numerous, but are not sufficiently sharp to limit the speed of trains. Likewise, the grades are short and so light as to be of no consequence in limiting speed or controlling the maximum tonnage for the through route.. The freight movement over this line between North Chelmsford and Ayer consists of approximately 20 through freight trains daily with a maximum of 25. Eight passenger trains are scheduled daily over this line, but with extra sections, as high as 30 passenger trains are handled on some days. A local freight is run each way daily except Sunday. The total train movement, therefore, amounts to from 30 to 57 trains daily.

General Layout and Traffic

This centralized control installation covers what was formerly known as the Stony Brook branch, a single-track connecting line. The second track was added and the new signaling system provided because, under the new operating arrangement, this line forms a section of two important through freight routes, one between Boston and the connections with railroads to the west at Rotterdam Junction, N. Y., and Mechanicville, and the other between Portland, Me., annd the western connections at Mechanicville, as well as the connections to the south at Worcester, Mass.

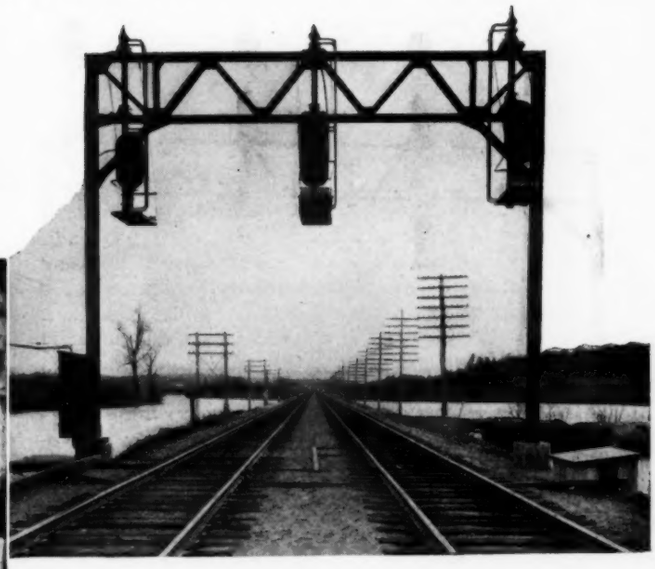
On account of the proximity to the industrial area of Boston, the bulk of the fast freight trains over this line between North Chelmsford and Ayer are handled at night, those inbound being scheduled for morning deliveries, while those outbound contain cars which have been pulled from industry and freight-house tracks after closing time, and are being forwarded during the night. This traffic is bunched in one direction during certain hours and in the other direction during other periods. It was for the purpose of providing maximum track capacity, first in one direction and then in the other, that the signals and centralized control system

Control

To Increase Track Capacity



Control Machine at North Chelmsford



Automatic Signals for Either Direction

were arranged so as to permit trains to move in either direction on each track.

The through passenger trains between Boston and Troy, N. Y., the route of the Minute Man, are handled over the Fitchburg division and, therefore, do not pass over the section between Ayer and North Chelmsford. However, the through passenger trains from New York to Maine are routed via Worcester, Ayer and North Chelmsford. In the summer this traffic is so heavy at certain times that six to eight sections of the regular trains are required. The bulk of this traffic is handled over the centralized control section at night.

Track Layout and Signaling

A center passing track about a mile long is located between Westford and Graniteville. All of the switches for this passing track layout are power-operated under the control of the operator in charge of the centralized machine at North Chelmsford. The switch machines are Model-5A, low-voltage type equipped with dual control. When switching moves are to be made, the dispatcher issues an order authorizing the trainmen to throw the selector lever, which causes all of the signals protecting the layout to indicate stop, and at the same time changes the connection of the switch-operating rod from the power machine to the hand-thrown lever, so that it may be handled by the trainmen. Complete approach and sectional locking is provided for all power-operated switches.

Positive stop signals, called starting or entering signals, designated by double signal units, are mounted on two-track signal bridges located at North Chelmsford, marked as 1-1 and 1-2, and at Ayer, marked 11-2 and 12-1. Likewise, positive three-arm signals, placed on ground masts, are located at Westford and Graniteville, approaching either end of the center siding, and positive three-arm signals are placed on three-track bridges located near each end of the siding to direct train movements to either main track. Intermediate automatic block signals, controlled by the Absolute Permissive Block principle, are located approximately a mile apart.

The centralized control machine was placed in the existing tower at North Chelmsford and consists of 12 levers, 8 working and 4 spare. The towerman operates the machine in addition to his other duties and in the remainder of this article is referred to as the train director. He controls all train movements between North Chelmsford and Ayer, conferring superior rights on certain trains as the immediate conditions require, and his orders are delivered through the agency of the roadside signals.

Although trains run on both tracks in either direction, the director cannot cause an unsafe condition. All signals have three controls; An automatic control, which gives opposing and following protection the same as on any single-track line equipped with automatic block signals; a switch control, which requires each switch to be in proper position before an indication can be given; and a manual control, which is performed by the train director. All of these controls must be working properly before a "proceed" signal indication can be given.



Track and Signal Plan of Centralized Control Territory fr om North Chelmsford to Ayer

As trains enter or leave any of the three tracks at the center siding or as they pass over track sections in advance of signals at the ends of the territory, an "OS" is sent automatically to the train director who follows their progress through the territory by means of tokens in the model board. Telephones have been installed at all positive signals and hand-thrown switch locations, so that trainmen can get in direct communication with the train director.

To move a train west on track No. 2 from North Chelmsford to Westford, the train director at North Chelmsford will put No. 1 lever down. Signal 1-2 and the intermediate signals A-B-C-D will then indicate "proceed." Intermediate signals are not required for the protection of opposing train movements, since this protection is provided by the interlocking of opposing signals. The signals have the A. P. B. control, which is directional, so that each signal controls through the block to the next signal ahead, for trains moving in the same direction, and through to the center siding for opposing trains. For example, Signal *A* will indicate "stop" with a train located between *A* and *B* moving in the direction of the arrow. As soon as the train passes Signal *B*, Signal *A* will display a caution indication, the train director's lever being set to permit a following move. If the director moves his lever to the center position after the train enters the "OSing" track circuit, immediately ahead of Signal 1-2, the train will then hold advance lighting on all intermediate signals as far as the center siding at Westford, and hold all opposing "HD" relays dropped. The lights on Signals *A-B-C-D* will go out as soon as the train clears the setting-point joints in their respective locations. For following moves, with a train at *X*, the train director can give a calling-on signal by putting No. *1* lever up.

Flashing-light automatic highway crossing protection signals have been installed on five crossings between North Chelmsford and Ayer, and are so arranged as to give crossing protection for reverse running on either track.

The construction was handled by Boston & Maine forces, being started on December 4, 1928, and completed March 26, 1929.

Proposed B & O Acquisition of C. I. & L.

Daniel Willard, president of the Baltimore & Ohio, addressed the Hammond, Ind., Chamber of Commerce on June 6 on "The Monon Matter," explaining the reasons why the Baltimore & Ohio included the Chicago, Indianapolis & Louisville in its unification plan filed with the Interstate Commerce Commission February 19.

Mr. Willard answered the objections to the Monon being included in the Baltimore & Ohio System. He showed that the first suggestion of this was made by Professor W. Z. Ripley, who, at the request of the Interstate Commerce Commission, made an exhaustive examination and report to that body on consolidations, which report, with slight modifications, was adopted by the commission and published as its tentative plan. In his report Professor Ripley recommended, Mr. Willard said, "that the Baltimore & Ohio be strengthened in the West by the inclusion of several lines, of which one was the Monon." Mr. Willard also stated that there was no objection to this suggestion at any time while the hearings on the commission's plan were in progress, nor since, until after the Baltimore & Ohio had filed its unification plan last February.

Quoting from that section of Professor Ripley's report, the president of the Baltimore & Ohio read into his speech that "both the great southeastern systems (the Southern Railway and the Louisville & Nashville Railroad) therefore are acquiescent in the matter of this relinquishment of their joint investment in the Monon." This acquiescence, according to Mr. Willard, has changed recently into opposition on the part of the two carriers mentioned.

However, because of the previous favorable attitude of these railroads and others, Mr. Willard said he felt "justified in assuming that there would be no objection on the part of either the Southern or the Louisville & Nashville to the sale of their ownership in the Monon stock to the Baltimore & Ohio on terms, of course, that would be mutually satisfactory." He conceded, however, the right of these two railroads as well as the Monon and others interested, to oppose the Baltimore & Ohio's absorption of the Monon if they so desired for what they might feel as good and sufficient reasons.

It is nevertheless the opinion of Mr. Willard that Professor Ripley's recommendation to the contrary was the right one and he is in accord with the same authority that "groups of railroads to be made up under the consolidation policy of Congress should generally be confined within the borders surrounding the particular rate territory in which such systems are located."

As to the likelihood of the state of Indiana being injured by the merger, Mr. Willard brought out the fact that the Baltimore & Ohio spends $10,000,000 yearly in Indiana, as against $4,000,000 by the Monon. One million of this amount is for taxes. Only recently, too, the Baltimore & Ohio had placed an order for new passenger equipment at Hammond amounting to a million and a quarter dollars. With three main lines crossing the state, the main-line mileage of the Baltimore & Ohio in Indiana is almost equal to all the lines of the Monon, including its light branches.

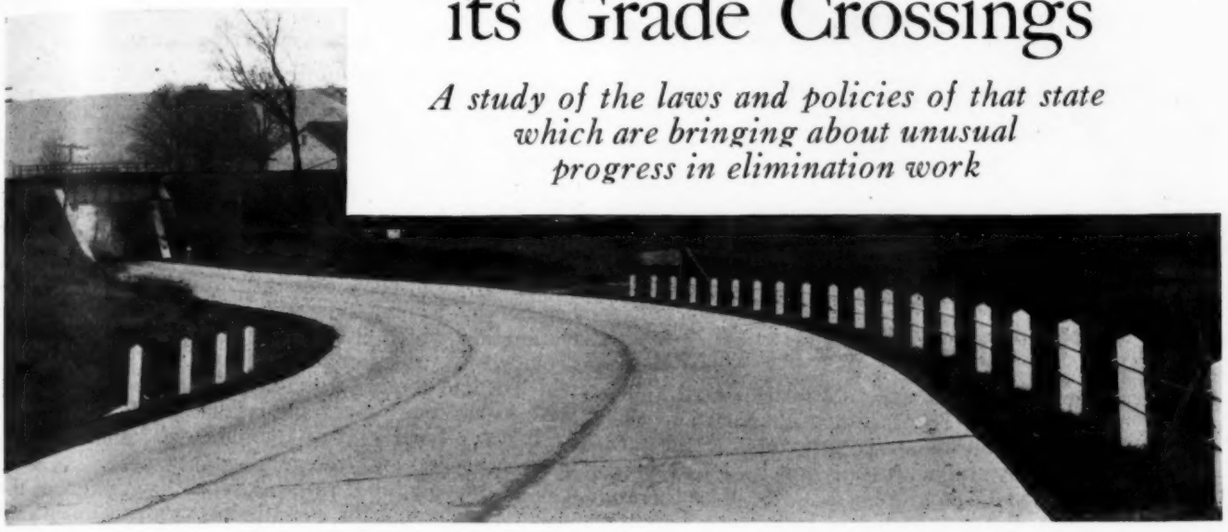
Referring to the reported statement of President Kurrie of the Monon, that the merger would close the principal shops of the Monon at Lafayette, Indiana, President Willard said that such fears were groundless and that "instead of the work which is being done at Lafayette being reduced, it might well come about that the work at this shop would be substantially increased. It might easily appear, as I believe it would, that the engine repair work on what is now known as the Indianapolis division of the Baltimore & Ohio, some 300 miles long, could economically be transferred to Lafayette or to Bloomington, depending, of course, upon the relative efficiency and availability of the two places."

Mr. Willard did not agree with President Kurrie that the efforts to include the Monon reflected a "fight" between east-west and north-south railroads, but enunciated the principle that "there is, and always will be, a healthy, active and proper competition between shippers, between railway companies and between ports interested in the same commodities or activities, and such competition is recognized in the law and so far as I know, no one seeks to suppress it."

After stating that the merger would not harm the Monon's continuity of service to the south, Mr. Willard also showed the groundlessness of fears expressed that much business would be diverted to Baltimore & Ohio lines outside the state. On the contrary, he declared that, with the Monon as part of the Baltimore & Ohio, freight between Cincinnati and Chicago could be routed through Indianapolis, 72 miles shorter, than round by way of Deshler, O., as at present.

How New York Is Eliminating its Grade Crossings

A study of the laws and policies of that state which are bringing about unusual progress in elimination work



Where the Delaware & Hudson Crosses the Nineveh-Afton State Highway in Upper New York State

AS the grade crossing problem has become more serious from year to year, owing to the rapid development of the country, the phenomenal increase in highway traffic, and the increased frequency and speed of rail traffic, municipal, county and state officers and public regulating bodies over the country have attempted to cope with the situation to various degrees, in various ways and with widely varying degrees of success. A few states, through various methods, are beginning to make some progress in the solution of their grade crossing problem, but the one state which is apparently making the greatest progress in the elimination of its grade crossings, is New York. Under the present policy of that state, a number of measures have been adopted to insure a progressive program of grade crossing elimination work, to provide for financing the work through assistance by the state, and to preclude unnecessary delays in carrying out the work.

New York has a larger motor vehicle registration than any other state, totaling 2,083,942 in 1928. It also has approximately 7,371 grade crossings of main tracks at the present time outside of the city of New York. Viewed from another angle, the seriousness of its problem may be appreciated through the fact that from January 1, 1925 until August 1, 1928, a total of 632 major grade crossing accidents occurred in the state, of which 321 involved fatalities. In the first eight months of 1928 alone, 47 fatal and 67 non-fatal accidents occurred at grade crossings in the state.

First Grade Crossing Laws in 1897

Since 1897, laws have been on the statute books of New York relative to the elimination of grade crossings. From the standpoint of the necessity of eliminating the relatively few grade crossings which might have been considered to be unusually dangerous in the early years of the present century, these laws appeared adequate, but by 1920 agitation had become pronounced for more action than was possible under the laws then in effect.

Under the old statutes with respect to the elimination of grade crossings, which were embodied in what is known as the Railroad law, relatively little was accomplished from the standpoint of eliminating ultimately the major part of the grade crossings of the state. Definite provision was made in this law whereby the railroad companies would pay 50 per cent, and the state and the municipalities each 25 per cent of the cost of grade crossing elimination projects, but the inactivity of this provision is seen through the fact that the last appropriation made by the legislature was in 1923 when only $500,000 was appropriated to cover the state's share. Prior to that time appropriations were generally for $100,000 but in several years no appropriation at all was made.

Possibly the greatest obstacle in the way of eliminating grade crossings within the state, was the lack of funds available for this work. There was no statutory requirement that the legislature should appropriate any amount, and therefore, in making appropriations, it was governed largely by the balance which the Public Service Commission had available with which to order eliminations. Under the law, the commission could not make an order directing an elimination unless funds with which to pay the state's share had been appropriated prior thereto.

In addition to the sums appropriated by the legislature for specific use by the Public Service Commission in paying the state's share of the cost, there was one other source from which money could be had for this work. This source was certain funds of the Department of Public Works, then known as the Commission of Highways, and while these funds were greatly limited, there were several years when it was possible to eliminate crossings only because of the fact that money was available from this source.

Disastrous Accident Brought About New Laws

Laboring under these difficulties, relatively little was accomplished and agitation for elimination work was limited to localities interested primarily in special projects. This condition might have continued for some time under normal conditions except for a grade cros-



A Multiple-Track Overhead Crossing of the Erie at Jamestown, N. Y.

sing accident in 1923, in which 9 people were killed and 30 were injured. The feeling with regard to this accident was made the more acute because of the fact that the particular grade crossing involved had been ordered eliminated 17 months prior to the time the accident occurred, but no work had been done because of litigation instituted by the railroad companies.

As a result of the feeling which was aroused, the governor of the state presented a special message to the legislature on March 3, 1924, pointing out the inadequacy of the state's program with relation to the elimination of grade crossings, and stressing the need for greater action. At that time he outlined a plan which had been urged by the commission, calling for an amendment to the state constitution, creating state funds for elimination work, and permitting the state to loan money to the railroads and municipalities to bear their respective shares of the cost of carrying out the work. In this plan the entire work could be financed in the first place by the state, which would be repaid by the railroads and the municipalities for their respective shares, in annual installments.

In 1925, as a result of the efforts of those interested in the above plan, the subject of eliminating railroad-highway grade crossings received recognition in the state constitution through the adoption by the people of an amendment authorizing the creation of a debt by the state, not exceeding $300,000,000, to provide money for eliminating grade crossings. In this same amendment it was provided that such work be done under state supervision, and be paid for in the ratio of 25 per cent by the state, 25 per cent by the city, town or village, and 50 per cent by the railroad company.

Investigation Made of Crossing Problem

During the same year, a joint legislative committee was appointed to investigate the entire question of the elimination of grade crossings within the state. In the report of this committee, which was presented in 1926, it was pointed out that there were at that time, 7,504 main-track grade crossings in the state, and that in the opinion of the chairman of the Public Service Commission, at least 4,000 of these crossings should be eliminated. Continuing, the report divided the grade crossings in the state into three classes, A, B, and C, according to the extent and nature of the traffic on the railroads and the highways, and gave the estimated approximate cost of the elimination of the various classes of crossings. One thousand, nine hundred and seventy-two crossings were placed in Class A with an approximate cost of elimination of $281,810,000; 2548 crossings were placed in Class B with an approximate cost of elimination of $166,760,000; and 2984 crossings were placed in Class C with an approximate cost of elimination of $155,325,000.

New Grade Crossing Law

As a result of the studies made, a law was passed in 1926 governing the elimination of all existing grade crossings of steam and electric railroads within the state, outside of the cities of New York, Buffalo and Syracuse, concerning which special statutes were enacted. The new law, which was known as Chapter 233 of the laws of 1926, did not materially change the practices of the state with respect to grade crossing elimination work, but it did place certain limitations upon the Public Service Commission with respect to the orders for elimination which it might make. In this respect, it provided that the commission could not make an order which would require a municipality to pay back to the state in any one year a sum which would be in excess of 1/20 of 1 per cent of the assessed valuation of the taxable property of the municipality according to its last assessment roll. In other words, the effect of this provision was that the commission was prohibited from making an order which would result in an increase of one-half mill per annum in the tax rate in any municipality. Provision was made, however, in three ways, to take care of eliminations where the increase in the tax rate would be above that specified: by giving municipalities the power to express their desires by a vote of the people, by securing aid from the county in the form of a contribution, or by making the elimination a county project, in which event the county would pay the entire share of the community. This brought the county into the subject of grade crossing elimination for the first time, since the constitutional amendment adopted in 1925 did not include the county as a unit.

Another important change in the procedure of grade crossing elimination was brought about by the new law, whereby the supervision of all construction work was placed under the State Department of Public Works, while all financial matters were transferred to the state comptroller.

Limitations Found in New Laws

Immediately after the passage of Chapter 233, which was the first grade crossing elimination law, the commission adopted an initial program of crossings to be eliminated, and created a separate grade crossing bureau in the engineering division of the commission, under the supervision of the chief engineer. This initial program consisted of 108 projects, involving 174 crossings which were scattered widely throughout the state and distributed equitably over the various railroads. Hearings were started on these projects, but it soon became apparent that the provisions of the law relating to that part of the financing by municipalities would seriously limit the progress of grade crossing work. This was due to the limitation placed on the increase of the tax rate allowed in any municipality, and while the act provided that a town or village could elect to assume a burden in excess of the limitation set, or could secure aid from the county, there were only five instances of such favorable action, and in most cases, therefore, it was necessary to abandon elimination proceedings.

Recognizing this barrier to eliminating grade crossings which confronted many towns and villages with burdens far in excess of their capacity to pay, even under the liberal terms for refunding the money which was to be

borrowed from the state, a constitutional amendment was passed in 1927, amending the first constitutional amendment with reference to the creation of a state debt for the elimination of grade crossings. This new amendment, which is in force at the present time, relieved cities, villages and towns from paying for any portion of the costs of grade crossing elimination work, and made the county the unit to bear the cost, other than that chargeable to the state and railroad companies. During this same year, the first grade crossing elimination law (233), was amended by Chapter 445 of the laws of 1927, which was designed primarily to remove the doubt which existed as to the jurisdiction of the Public Service Commission in the case of certain crossings. The new act also made definite provision with regard to the procedure for drawing up programs of elimination projects for each year.

Following the enactment of the new grade crossing law, new proceedings were started in connection with 60 projects involving state and county highways, but progress was delayed considerably owing to the uncertainty which arose concerning the effect of the new constitutional amendment shifting the municipalities' share in grade crossing work to the counties. The main source of delays encountered, however, was in connection with the acquisition of the lands and easements required in connection with specific projects. This latter difficulty, and a number of other obstacles in the way of speeding up grade crossing elimination work, were remedied by an act, which became a law in March 1928, known as the "Grade Crossing Elimination Act," Chapter 678 of the laws of 1928. Under the provisions of this law, and the amendment to the constitution in 1927, all grade crossing elimination work within the state is now carried out.

$300,000,000 Provided for Elimination Work

Under the specific provisions of the constitutional amendment, the legislature is authorized to create debts for the state not exceeding $300,000,000 in the aggregate, to provide money for the elimination, under state supervision, of highway-railroad crossings at grade. The amendment also provides that the costs of this work shall be borne in the ratio of 50 per cent by the railroad companies, and the remaining 50 per cent by the state and the county in which the crossing is located, or by the state and the city in which the crossing is located if the city contains two or more counties.

Under the power granted to it in the above provisions, the legislature, by special legislation, was authorized to cover the debts incurred in grade crossing elimination work by the sale of state "grade crossing bonds", to be issued and sold by the state comptroller from time to time as might be required. The grade crossing elimination act also fixed the division of costs of elimination work other than the 50 per cent required to be paid by the railways, by providing that in all elimination projects, the state shall pay 40 per cent, and the county or counties in which a crossing is located shall pay 10 per cent. Provision was also made that where two or more counties or two or more railroad companies are involved, the cost to each shall be determined by the Public Service Commission, to the end however, that the railroads together shall pay 50 per cent of the costs, and that the counties together shall pay 10 per cent of the costs.

Elimination Programs Prepared Each Year

In carrying out grade crossing work in the state, two state bodies are principally concerned; the Public Service Commission and the Department of Public Works.



Over the Pennsylvania Near Mayville, N. Y.

The first of these bodies is quasi-judicial in character, while the latter is primarily supervisory in capacity. In addition to these two bodies, the state comptroller also plays a part, and has charge of all financial matters in connection with grade crossing elimination work.

The first step in the practices of the state with regard to the elimination of its grade crossings is the formulation of a program of eliminations to be considered during the ensuing calendar year. The Department of Public Works is required to file with the Public Service Commission, on or before October 1 of each year, a list of crossings, the elimination of which it suggests for consideration during the ensuing calendar year. This list is based upon a comprehensive study of the crossings of the state, and in formulating the list, an attempt is made to spread the work over the state as a whole and to divide it equitably among the various railroads, giving due consideration to any grade crossing elimination work which may already be under way. At the same time the railways and municipalities are given an opportunity to file similar lists if they so desire. All of these lists contain the names of the crossings, the names of the railroads crossed, the counties, towns, cities and villages in which such crossings are located, and an estimate of the cost of eliminating each of the crossings, based upon the most practical method of effecting the elimination.

After giving due notice to the Department of Public Works, the railroads and the counties and municipalities affected, the Public Service Commission holds public hearings upon the lists of crossings suggested, together with such additional crossings as the commission may think, for various reasons, should be considered. At these hearings all parties are given an opportunity to be heard, and the railroad companies and counties are required to state whether they will avail themselves of state aid.

Upon the completion of these hearings, and not later than December 1 of the same year, the commission, from the information at hand, designates by order a definite program of crossings, the elimination of which will be considered during the following year. In framing this order, care is exercised by the commission to provide for the most effective elimination work, and at the same time, to spread it equitably over the state and among the different railroads. The commission is empowered to amend this general order from time to time as it sees fit, and serves copies of the order upon all those concerned, including the railroads.

Following the serving of this general program order the commission holds hearings on the individual elimination projects included in the program, and makes or-



Where the New York Central Crosses the Kirkland-Rome County Highway at Clark Mills, N. Y.

ders stating the specific manner in which the elimination shall be accomplished in each case.

Railroads Do Most of Actual Work

The orders of the commission direct the Department of Public Works, the railroad company or the county affected, to prepare plans, specifications and estimates covering the cost of the elimination work, the plans to show specifically that part of the work which, when completed, shall be maintained by the various parties concerned. After such plans, specifications and estimates have been submitted to and approved by the commission, the railroad company concerned is required to perform the work involved, exclusive of the highway approaches, and the Department of Public Works is required to perform the work relating to the approaches unless the commission directs the railroad company or the county to do the latter work. If a railroad company does not desire to undertake the specific work assigned to it, it may request that the work be performed by the Department of Public Works, and the commission may so direct. All of the actual work of construction in connection with grade crossing eliminations in the state is carried out under the general supervision of the Department of Public Works, and in accordance with the orders of the commission with respect to clearances, grades, visibility, etc.

If a railroad company or any of the other parties involved in a specific elimination project desires to make changes or additions in connection with the work, other than those strictly necessary for the elimination, such changes or additions must be shown by plans and be approved by the commission after a hearing with reference to such changes and additions. When such a condition arises, the order of the commission gives the estimated cost of the desired changes or additions, and also, the division of the expense incident thereto.

With the preliminary proceedings out of the way, the commission directs the manner in which the work is to be done, whether by contract or by the direct employment of labor and the purchase of materials, and authorizes the railroad company or the Department of Public Works, or both, as the case may be, to let such contracts as may be involved. All proposals of contractors are submitted to the commission, which has the power to reject bids which it may deem excessive.

Upon the awarding of any contract affecting a specific project, certified copies of the contract are filed with the other parties concerned, and the work can then begin according to the plans, provided the necessary land, if any, has been acquired. If it is found advisable to change the plans during the course of the work in the general interest of the elimination project, it is necessary for that party requesting the change to submit revised plans and estimates to the commission for its approval. If the commission approves the change and estimates, the work is allowed to proceed on the new basis, and, in the event that the change involves additional costs, such increased costs are prorated among the three parties concerned, on the same basis as the general cost of the elimination work.

Method of Paying for Work

The proceeds of state grade crossing bonds are used in the first instance to pay the costs of all elimination projects ordered by the Public Service Commission, unless in specific instances, the railroad companies or the counties elect to pay their share directly from their own funds without the aid of the state. Such election on the part of a railroad company or a county must be filed with the commission within 30 days after the issuance of an order directing an elimination project, unless the commission allows an extension of time.

A number of the railroads have found themselves in a position where they cannot take advantage of state aid. This is because of the fact that the amount which they borrow from the state becomes a prior lien on their property and these companies believe that borrowing under such conditions is inadvisable in view of existing mortgage conditions on their properties. Hence, several of the larger roads are not taking advantage of the state loan provision, among these being the New York Central, the Lehigh Valley and the Long Island.

Upon the completion of an elimination project, and its approval by the commission, the state comptroller computes the proportionate share of the cost to be borne by each of the parties concerned, and determines the manner in which payment shall be made. After a hearing, at which those interested are heard, the comptroller makes a final determination with regard to the division of the costs and the manner of making payments.

In the event of the failure or refusal of a railroad company to pay the amount or amounts specified in such a statement, and at the times prescribed, the amounts due, according to the law, can be apportioned to the several towns and cities in the county in which the crossing is located, according to the assessed valuation of the real property of the railroad, and placed on the respective assessment rolls of such towns and cities, which, in turn, can issue warrants for collection. It then becomes the duty of the towns and cities concerned to collect the amounts due from the railroad company in the same manner as other taxes are collected, and when collected, to pay the same to the county treasurer, who, in turn, must turn the money over to the state treasurer.

Acquisition of Lands and Easements

The acquisition of lands necessary in connection with grade crossing eliminations is now accomplished by appropriation by the state under the provisions of the new grade crossing elimination act. Under this act, the Public Service Commission approves and the Department of Public Works files in the office of the Department of State, an accurate description and map of any lands which are deemed necessary in connection with the elimination of any crossing, whereupon the state may immediately take possession of such land for carrying out the elimination work.

Property owners affected are given full protection under the law in the determination of the value of

property appropriated, and in the collection of legal damages, but any proceedings which may be instigated do not prevent the use of the land and the progress of the grade crossing elimination work. All awards or judgments in connection with the acquiring of lands, including all costs such as those incurred in the making of surveys, the preparing of descriptions and maps, the serving of notices of appropriation, etc., are considered as part of the cost of the elimination project, and are paid for by the parties concerned in the proportions prescribed for the entire work.

Appeal is Only Recourse of Aggrieved

The sole protection of a railroad company or a municipality against orders or decisions of the commission in connection with the elimination of grade crossings, is through the medium of appeal. The law provides that any party aggrieved by any order or decision provided for in or growing out of the grade crossing act, may, within 30 days after the service of an order or decision, apply to the Public Service Commission for a hearing, or in the case that a hearing was held prior to the making of such an order, for a rehearing, as a result of which the order causing grievance may be set aside, modified or affirmed. The law also provides that any party aggrieved, may appeal from an order or decision to the Appellate division of the Supreme Court which has jurisdiction over the particular area in which the grade crossing is located, and furthermore, to the Court of Appeals, in the same manner, and with like effect as is provided in the case of an appeal from an order of the Supreme Court.

All of the foregoing with regard to grade crossing elimination work in New York has reference only to grade crossings within the state, outside of the cities of New York, Buffalo and Syracuse. In recognition of the fact that grade crossing elimination work within these larger cities is influenced or affected invariably by many factors peculiar to the cities themselves, separate laws were enacted to cover the elimination of grade crossings within these three cities. These special statutes confer jurisdiction as to construction upon a commission, known as the Transit Commission in the case of New York, and upon the special grade crossing commissions in the other two cities, but in each case the work within these three cities is related closely to the general grade crossing elimination work of the state, and the parties involved are allowed the assistance in financing provided by the $300,000,000 state bond issue.

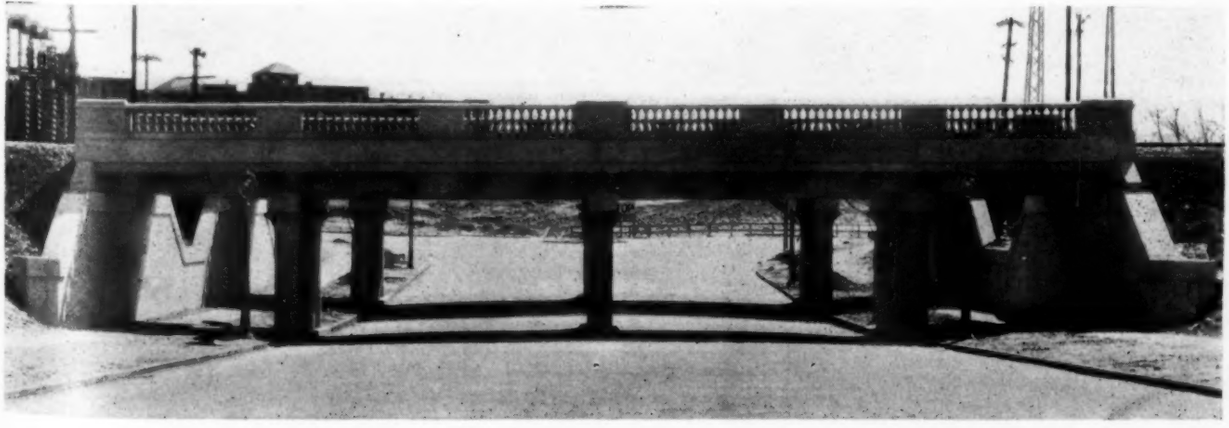
In addition to the policy of the state for the elimination of grade crossings by the separation of highway and rail traffic, as provided for in the constitutional amendment and the grade crossing elimination act now in force, a large amount of attention has been given by the Public Service Commission, under provisions of the grade crossing elimination act, to the closing of existing crossings which are relatively unimportant, and a number of orders closing such crossings have been the result. In this work, however, the commission has encountered serious difficulties, brought about mainly by the objections of local parties interested in keeping the crossings open.

During the past year the railroads of the state have suggested a number of crossings which should be closed permanently, and certain of these have been placed on the commission's program for 1929 for consideration. It is expected, however, that in most instances, great pressure will be brought by local interests in an attempt to prove that the public welfare does not require the closing of the crossings.

Much attention is also being given by the commission to many existing undergrade and overgrade crossings with the idea of making them safer by certain changes or alterations, as provided for under Section 91 of the Railroad law of the state. Under this section, a railroad company or the proper authorities of a municipality, town, county, or the state, may bring a petition in writing to the commission, alleging that public safety requires alteration of a certain crossing, its approaches, the method of crossing, the location of the crossing, a change in the existing structure by which such crossing is made, or even the closing and discontinuance of the crossing and the diversion of highway traffic thereon to another street, highway, or other crossing.

After due consideration of such petitions, and public hearings, the commission determines what alterations or changes, if any, shall be made. However, any orders made by the commission under this law are based on the assumption that funds are available and that no recourse is to be made to state aid through the $300,000,000 bond issue. Whenever a change is to be made in an existing crossing or structure under this law, the commission designates under whose authority the work will be done, and 50 per cent of the expense is borne by the railroad company, while the remaining 50 per cent is divided between the municipality, town, county and state, or any of them, depending upon the unit or units having jurisdiction over the street or highway involved.

Under other provisions of the Railroad law, increased caution is also being exercised with regard to the opening of new crossings, whether by the construction of new railway lines or new public thoroughfares. Sole



An Attractive Overhead Crossing of the Erie and Lehigh Valley at Rochester, N. Y.

right in this matter is vested in the Public Service Commission, which can refuse petitions for new crossings at grade by directing that the new crossings shall be above or below grade. Wherever a new railway is constructed across an existing highway, the entire expense in connection with the crossing involved must be borne by the railroad company. On the other hand, when a new highway is constructed across an existing railroad, the railroad company concerned is required to pay one-half of the cost of the work involved, and the remaining 50 per cent is borne by the municipality, except in the case of state and county highways under the jurisdiction of the Department of Public Works. In the case of state highways, the whole 50 per cent is borne by the state, while in the case of county highways, the 50 per cent is divided between the state and the county in the same proportion as the original construction cost of the highway was borne.

Present Policy Is Bringing Results

As a result of the old policy of the state, a total of 529 grade crossings had been eliminated up to and including 1925, this total not including those crossings eliminated within the cities of New York and Buffalo. During 1925 alone, in which the old policy of the state was still in effect, 16 grade crossing projects were completed, which involved the elimination of 39 crossings. In addition, four crossings were changed or altered under the provisions of the Railroad law.

In 1926, after the passage of the state referendum with regard to the bond issue, and the grade crossing elimination law, the commission adopted an initial program of crossings to be eliminated, which included 108 projects involving 174 crossings. Owing to the difficulties of financing under the statutes at that time, many of the projects included in the initial program were dropped, but before the year was over, 116 additional projects, representing 307 crossings, had been added to the program. While many projects were started during that year, only three crossings were actually eliminated under the new laws. In addition to these, however, 14 crossings were eliminated and 3 were altered during the year under the provisions of the Railroad law.

In 1927, while still laboring under the difficulties of financing and delays brought about through the procedure necessary at that time in connection with the acquisition of lands and easements, the commission issued orders directing the elimination of 167 crossings, and within that year 50 crossings were actually eliminated. In addition, 10 crossings were eliminated and 9 crossings were altered during that year, under the provisions of the Railroad law.

The program of the commission for 1928 included 174 projects, involving the proposed abolition of 203 crossings, which it was estimated would cost approximately $30,867,000. During the year 24 additional projects, representing 61 crossings and estimated to cost $2,575,000 were added to the program. During that year, 52 crossings were actually eliminated under the provisions of the grade crossing law, and in addition, 1 crossing was eliminated and 14 crossings were altered under the provisions of the Railroad law.

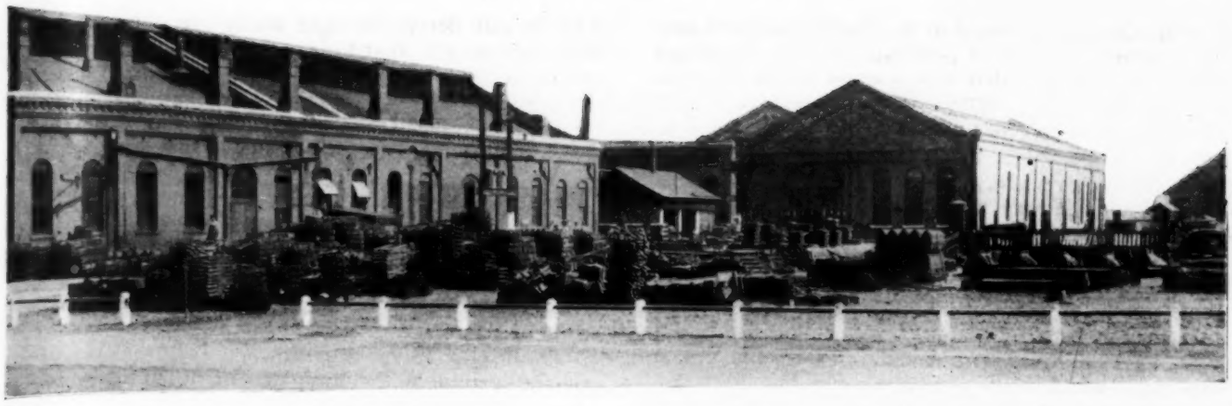
One hundred and thirty-nine additional projects, involving the elimination of 246 grade crossings in the state, outside of greater New York, Buffalo and Syracuse, were designated by the Public Service Commission for consideration during 1929. The total estimated cost of these eliminations is $31,123,700, of which the state's share is set at $12,449,480, the counties' share $3,112,370, and the railroad companies' share $15,561,850. Thirty-three elimination projects involving 54 crossings, which were under consideration on the 1928 program, but upon which no determination had been made, were also continued on the 1929 program. The total estimated cost of these projects is $8,391,000, of which the railroad's share is $4,195,500.

The projects on the 1929 program involve 20 railroads. Forty-one of the projects are on the New York Central, with the road's share of the estimated cost set at $5,173,500; 19 projects are on the Delaware & Hudson, with the road's share of the cost $1,176,400; 19 projects are on the Erie, with the road's share of the cost $1,491,400; 13 projects are on the Lehigh Valley, with the expense to the road set at $1,185,500; and 12 projects are on the Long Island, on which the road will be required to share $3,436,500 of the cost. On January 1, 1929 there were 52 eliminations under contract involving an estimated expenditure of $4,654,000.

* * * *



The Canadian Pacific's Trans-Canada Limited Leaving Montreal for Vancouver, B. C.



Frisco's Reclamation Plant—Reclaimed Material in Foreground

Frisco Scrap and Reclaim Plant A Money Saver

One of the first railway projects of its kind—Employs three hundred men—Does imposing business yearly

FIFTEEN years ago the St. Louis-San Francisco started at Springfield, Mo., the country's second railway reclamation plant. It consisted of a blacksmith shop with two forges and machinery for straightening and rethreading bolts. The value of all material reclaimed, considered at purchase prices, did not exceed $10,000 per month, and this included material returned to use from scrap without requiring shop work, of which there was much more then than at present. When this is compared with last year's output of more than six times that amount of material reclaimed from scrap a month, to which is added a large income from the sale of scrap shipped from Springfield each month, exclusive of brass, and also the value of a variety of miscellaneous operations, such as motor car repairing and rail sawing, an idea is afforded of the extent to which "reclamation" has grown on the railways and why the Springfield plant (which has trained six of the officers in charge of similar work on other roads), continues to be one of the outstanding institutions of this kind.

Handles 2,500 Cars of Material

A few figures at the outset will afford a composite picture of the Springfield operations at the present time. During 1928 there were 2,510 cars of scrap received, comprising 41,074 tons of miscellaneous scrap and 9,171 tons of rail scrap. There were 1,328 cars, or 47,834 tons of scrap sold, exclusive of scrap brass shipped on exchange valued at $363,509, while by recovery, repair and conversion, 4,091 tons of material were reclaimed for use.



Serviceable Material Recovered from Scrap—No Repairs Needed

The operations extend over 10 acres of land, served by 8 tracks, while upwards of 350 men, housed in 8 buildings, having a total floor space of 32,350 sq. ft., are engaged in the reclamation and other repair work. Over 53 machines are used in the reclamation work alone.

While removed by several miles from the Frisco's main shop, from which much of the scrap comes, and while also an equal distance from the general storehouse where some of the reclaimed materials go, the stores department, which conducts these operations on the Frisco, has an advantage, denied to several similar plants, of having full use of the grounds and buildings of a terminal which was abandoned by the operating and mechanical forces with the construction of new facilities. The occupancy of the various facilities, however, took place gradually.

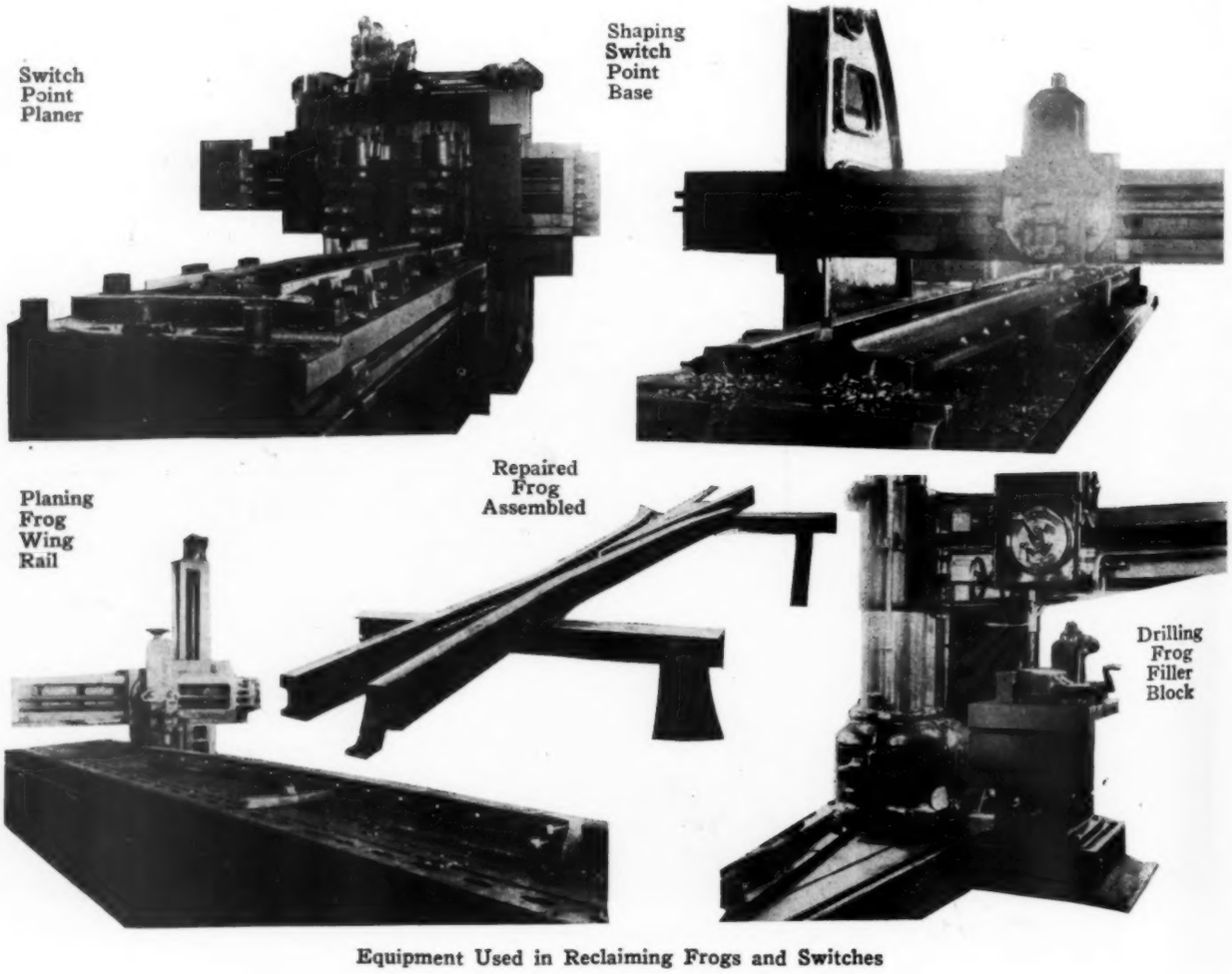
The first expansion after the opening of the bolt shop, which marked the beginning of reclamation operations at Springfield, took the form of a shop where all air and steam hose for the system are remounted, and this area was later expanded to include the reclamation of valves. This was followed by the development of a hand and push car repair shop. A building of brick, 60 ft. by 160 ft., and another brick building, 60 ft. by 180 ft., were acquired for these operations. Subsequently other buildings were occupied as follows: The motor car and woodwork shop, 60 ft. by 180 ft.; the tin shop, 60 ft. by 60 ft.; the bolt shop, 30 ft. by 60 ft.; and an oxweld and electric welding shop, 40 ft. by 60 ft. To the existing buildings additional structures have been added wherever necessary.

Considerable machinery was left in these shops for the reclamation forces when the mechanical department moved to new quarters, and new machinery has since been added, until at present the plant is equipped to repair a thousand varieties of material, some of the more important being listed as follows:

Frogs	Coil springs
Switch points	Car forgings
Guard rails	Bolts, all kinds
Angle bars	Signs
Continuous joints	Brace plates
Tie plates	Spike mauls
Spikes	Tamping picks
Switch stands	Lining bars
Gage plates	Mail cranes
Hose	Clay picks
Jacks	Track chisels
Springs	Adzes
Elliptical springs	

A Switch Repaired Every Hour

The work on frogs and switches is an outstanding feature of the plant's operations. Practically all frogs and switches removed from track are repaired in this plant, either by welding or by the use of parts machined from old rail, so that at present no new material of this kind is purchased for track laid with second-hand rail. The equipment includes an electrically operated planer which forms wing rails, guard rails and frog points sufficient to produce 4 to 5 frogs a day. Where new filler blocks are required, they are made on a new 32-in. electrically-operated shaper and drilled on a 5-ft. radial drill press, also electrically operated. Old rail is converted into switch points at the rate of one



Equipment Used in Reclaiming Frogs and Switches

complete switch an hour on an electrically-driven and controlled planer which handles the right and left switch points at the same time, after a supplementary machine has planed the bottom of the points. An electric welding machine is available for building up worn parts of frogs and switch points and a gap riveter is used in connection with all switch point reinforcing work, which not only applies to rivets as fast as they can be heated, but insures a finished job. The equipment of the machine shop also includes a third planer and shaper, two lathes, four small drill presses, one tool grinding machine, two angle cock grinders and three grind stones.

The extent of the blacksmith work done is indicated by the amount of machines installed in this shop, comprising 2 steam hammers, 1 drop hammer, 1 air hammer, 1 forging machine, 2 bolt-heading machines, 1 eye-bending machine, 1 large and one small press, 1 alligator shear, 2 combination punches and shears, 1 spring-testing machine, 1 spring-bending machine, 2 air riveters, 15 oil fires and 5 coal fires.

Scrap boiler steel from the locomotive shops, oil tanks, etc., is cut and pressed to form tie plates, which are produced at the rate of 600 to 800 per day as this class of scrap is available, and the same punches are used to recondition angle bars after the bolt holes have been plugged by the welding torch. No attempt was previously made to reclaim from scrap, rail joints that were bent or badly worn. Large quantities of these are now recovered in an improvised drop forge, equipped with a special die which reshapes the heated bar and forms the spike holes, all in one stroke.

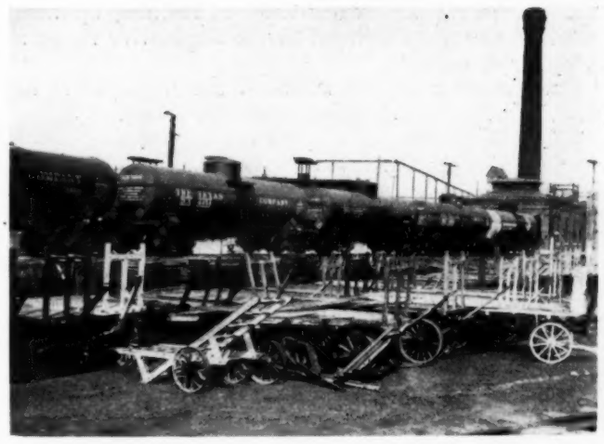
All track tools are redressed in the blacksmith shop, the work extending to the welding of new ends on claw bars and the manufacture of chisels out of tire steel, while the presses are almost continually in use for reclaiming car forgings, such as spring plates, brake hangers, sill steps, corner bands, stake pockets, etc., practically all fabricated parts of freight cars being made from scrap in this shop.

Over 500 Tons of Springs

The repair of elliptical and coil springs is one of the major operations at Springfield. The practice is to repair any elliptical spring which has less than 50 per cent of its leaves broken. If the breakage exceeds 50 per cent, the spring is scrapped and the unbroken leaves used in repairing other units. The facilities are unusually complete for this work, comprising a spring dismantling press, a large heating furnace and a smaller furnace for band heating, a spring listing machine, a



An Average of One Motor Car Is Rebuilt Daily



Baggage Trucks, Etc., Waiting for Repairs

double tempering furnace equipped with a potentiometer heat controlling device, and a spring banding machine, quenching vats and testing machinery. Each spring is tested before acceptance, after which it is painted.

The Frisco makes a large percentage of its freight brake hangers and grab irons from second-hand or scrap bar iron, and machine bolts are reclaimed with the facilities described. There were 326,321 machine bolts of various sizes produced in 1928. The iron from which these bolts and similar materials are made is straightened and sheared in the bolt house, where all threading is also done, while all new heads of bolts and grab irons are made in the blacksmith shop. A press forms the head and punches the hole in the grab iron at the same time. The work in the blacksmith shop also includes the manufacture of from 800 to 900 brake shoe keys a day, which are made from scrap coil springs.

Air hose remounting continues to occupy a large place in the operations. The equipment consists of an assembly of three air brake cylinders, one to clamp the hose in position while the other cylinders, one at each end of the hose, pull off the fittings. With this equipment one man is able to remount and test 200 hose a day.

All valve fittings reaching the scrap are subject to examination and nothing is discarded that can be returned to service with a reasonable amount of repairing. This includes air cocks as well as water and steam valves. All brass valves are cleaned by sand blasting, and then tested with air before being returned to stock. The output ranges between 4,000 and 5,000 brass valves a month.

In addition to repairing much tin work, such as signal lamps, etc., the tinware operations at Springfield have been extended to include the conversion of much tinware, principal among which are coal, journal packing and fire buckets and trash cans, which are made from old paint containers. The production also includes a variety of signs, including mileage markers which are shaped, painted and stenciled ready for use at the rate of 1,000 a month.

Locomotive pilots used on the Frisco are made at this plant from scrap iron flues and the work also includes the manufacture of sign posts, the latter work being done in the concrete department by filling old superheater flues or boiler flues with concrete and molding them into a concrete base for installation on the line of road.

The plant is equipped to repair 100 brake beams a

day. Coupler work is restricted to building up worn faces. Axles are reformed in the locomotive shops in an upsetting machine.

Three electric welding machines are employed at the plant, together with oxyacetylene apparatus.

The reclamation plant turns out an average of one completely repaired section motor car a day, as well as a variety of mill work, which, while not strictly reclamation, has been centralized in this plant because of the facilities and equipment afforded there, including particularly one jib saw, one cut-off saw, one jointer and sticker, one jib mortiser, one tenon machine, one shaper, one planer, one boring and mortising machine, one band saw and one wood lathe. The operations in this section of the plant extend to the reconditioning of all classes of bad order section and inspection cars, hand and push cars, baggage trucks, timber dollies, barrel skids, track levels, mail cranes, velocipedes and timber hooks.

Waste paper is gathered from all offices on the road, except St. Louis, pressed into bales of 100 lb. each at Springfield, and sold, the output amounting to approximately one car of baled paper a month. In addition to this, all grease removed from hub liners, grease cups, journal boxes, etc., is gathered and granulated, melted, strained and otherwise prepared for re-use at the rate of 600 to 800 lb. per day.

The Frisco does not ship any scrap, such as wheels, axles, etc., into the Springfield plant that offers no reclamation or requires no sorting prior to sale or disposal. Every effort is directed to avoid unnecessary expense. It is the practice, however, to ship all scrap and second-hand rail to Springfield for re-sorting and reconditioning prior to disposition either as scrap or second-hand rail. This rail is handled by locomotive cranes and run through a rail mill equipped to handle 40 rails a day. The old rail is first straightened by passing it through two straightening presses; it is then passed through a high speed friction saw, and subsequently drilled, if necessary. One man, using air, can drill 45 holes an hour at a cost of only 2½ to 3 cents a hole. This mill is also used to cut old rails for guard rails, or for the switch work conducted in the frog shop. Reconditioned rail is stored in the yard for use as called for, while the scrap is loaded and sold.

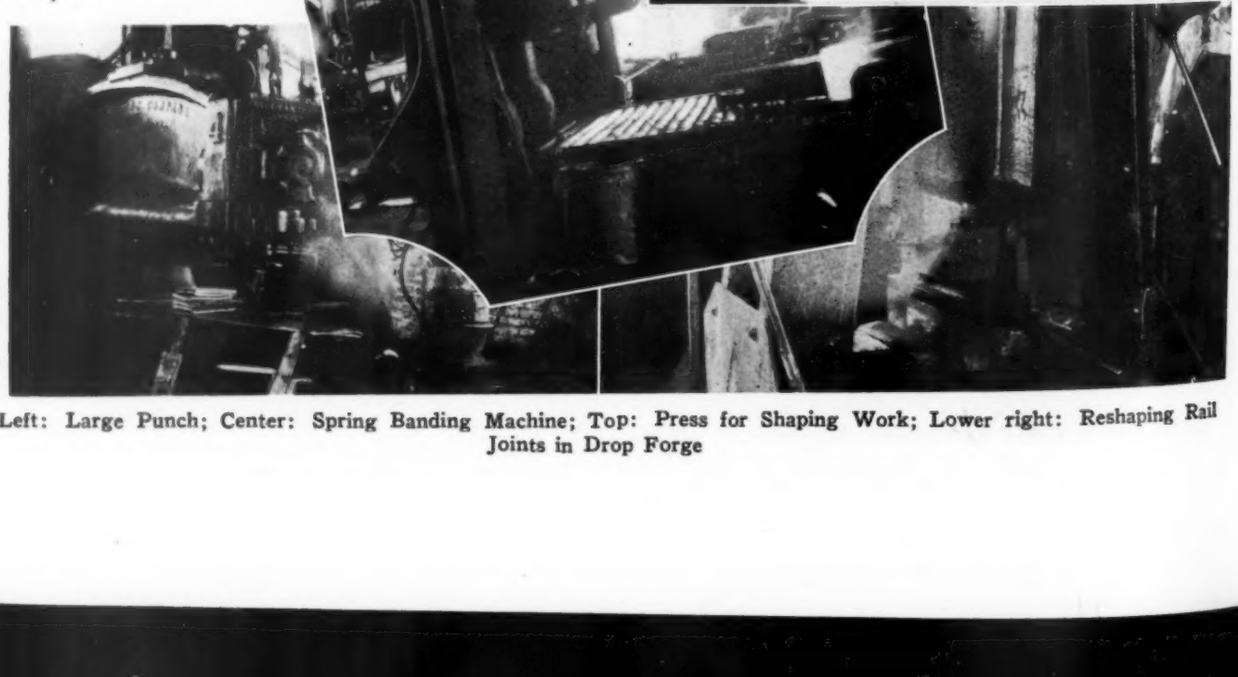
Miscellaneous scrap is received on tracks adjacent to the rail yard. It is sorted and reloaded for sale as rapidly as carloads lots can be accumulated while all serviceable and reclaimable material is moved immediately by tractor and trailer from the scrap yard to the reclamation plant.

Haul Material With Tractors

The transport equipment of three tractors is estimated to have reduced material handling costs $60 a day at this point. The tractors are not operated under definite schedules, but are guided by means of a triangular sign placed on a concrete base outside of each shop. One side of each triangle is painted red, another blue and another white. The red signifies that a load is waiting for movement at that point, the blue that an empty wagon is needed and the white signal signifies that the tractor work is not required at the time. The movement of tractors is controlled by turning the triangle so that the proper signal can be seen by passing operators.

Small materials, as they are reclaimed at Springfield, are immediately taken to the general store by motor truck, while the larger materials, such as castings, etc., are placed in storage in the reclamation area for direct shipment to points of use as designated by the stores department, in whose stock accounts the material is placed as soon as its production is reported by the reclamation office. The shipments of reclaimed material from the reclamation plant average about one car a day.

The scrap handling and reclamation is conducted under the supervision of L. J. Leysaht, a former superintendent of mechanical shops, who reports to the general storekeeper, A. W. Blume. Close contact is maintained with the officers of departments using the materials, to avoid reclaiming materials that are not wanted, and the proper clerical assistance is provided to maintain a record of volume and cost of material handled.



Left: Large Punch; Center: Spring Banding Machine; Top: Press for Shaping Work; Lower right: Reshaping Rail Joints in Drop Forge



Transportation Division Meets in Chicago

Per diem, demurrage and kindred subjects considered at two-day session

APPROXIMATELY 200 transportation officers were in attendance when Chairman J. J. Bernet, president of the Chesapeake & Ohio, opened the tenth annual session of the Transportation Division, A.R.A., which was held in Chicago, May 28 and 29.

R. H. Aishton, president of the American Railway Association, complimented the division on the work it has been doing in securing co-operation with the various shippers' boards and traffic leagues, and urged that this work be continued unabated, since the necessity for such co-operation continues to exist. He stressed also, the importance of railway men adapting themselves to changing conditions in the industry.

Mr. Aishton also announced that, at the meeting of the board of directors of the A.R.A., to be held June 7, it was proposed to elect J. J. Bernet, chairman of the division, to the posts formerly occupied by the late E. J. Pearson, as director and member of the executive committee of the A.R.A. The division unanimously approved this proposed action.

Advertising on Cars

The general committee, of which C. B. Wright is chairman, reported as follows:

The practice of private car owners and builders leasing their equipment to firms and individuals for advertising purposes is becoming a real menace to the railroads generally. The records indicate that 14 private car lines' owning refrigerator cars have leased a total of 7,464 cars to 212 firms. Most or all of these cars bear the advertising matter, trade marks, etc., of the lessee, which was the principal objective of the lease.

Obviously, every one of the 7,464 cars requires specialized handling which would not be necessary if the lessees would use the railroad or railroad controlled equipment available. Nearly one-half of the equipment of the ownership of these 14 companies is now leased on this basis. No strictly transportation advantage is gained by the use of these cars. Their use involves further the question of discrimination as between shippers by permitting advertisements painted thereon while other shippers are not accorded similar privileges.

Unless there is a discontinuance of the efforts on the part of builders, owners or lessors of such equipment to extend this practice further, it will be found necessary for the railroads to promulgate rules and regulations declining to move or accept in interchange equipment of any character containing shippers' advertising and further, it is the opinion of this committee that this declaration of policy should be generally disseminated to shippers, private car owners, equipment builders and such of the public as may in any way be interested.

The committee has given careful consideration to a car hire arrangement proposed by the Inland Waterways Corporation and arrived at the conclusion that the arrangement proposed would require the rail carriers to assume an expense that should properly be assumed by the barge line, and recommended against the proposal.

Progress was reported in the efforts to eliminate excessive detention of refrigerator cars under load, and in the unification of demurrage charges at cotton compresses.

In the absence of R. N. Begien, vice-president, Chesapeake & Ohio, his paper on "The Possibility of Increasing Car Efficiency Through the Study of Operating Methods," was read by G. D. Brooke, general manager Chesapeake & Ohio. An abstract of this paper will appear in an early issue.

Car Service

The report of the Committee on Car Service was presented by the vice-chairman, J. L. Brown, general superintendent of transportation, Chicago, Milwaukee, St. Paul & Pacific. The committee reported progress in the matter of controlling empty car mileage and encouraging the heavy loading of cars. The investigation of the practice of railways ordering company material loaded in their system cars indicates that a burdensome condition exists on many roads, and the committee is engaged in making a further analysis of the situation.

This committee also made a number of interpretations and recommendations for changes in the car service rules, including Rules 2, 8, 11, 12 and 14, and Note B to Rules 1 to 5, and exhibits showing these changes were submitted as part of its report. In connection with per diem Rule 16, embargo regulations, the committee reported as follows:

To overcome difficulties arising in connection with cases when carload shipments have been forwarded at less car-

load rates in order to defeat embargoes, the committee recommends the following revision of Paragraph 5 of the embargo regulations:

An embargo against less than carload freight which specifies minimum weight limits per car is prohibited. Shipments subject to minimum rates under the governing classification must not be accepted at less than carload rates and forwarded in violation of embargoes against carload freight.

This revision will be submitted to the members, in the form of a letter ballot.

Empty Mileage and Heavier Loading

M. J. Gormley, chairman of the Car Service Division, A.R.A., addressed the members on the subject of empty mileage and heavier loading. Mr. Gormley stressed the necessity for showing per diem by classes of equipment, rather than in a lump sum for all classes, and of having figures to show in detail the cost of empty car mileage, particularly in the direction of loaded traffic.

He outlined specific instances of what has been done by representatives of the car service division in encouraging heavier loading. In all parts of the country, these representatives have found opportunities for increasing the revenue per car and car utilization by conferences with the shippers, who have been found willing to cooperate in every instance.

He recommended that, to encourage freight solicitors to talk heavier loading to shippers, they be given credit for business secured on the basis of tons rather than cars.

The Committee on Records, through Chairman J. D. Altimas, assistant general superintendent of car service, Canadian Pacific, submitted comprehensive exhibits showing proposed changes in rules, including the change in per diem Rule 5, with respect to trap and ferry cars, putting them on the same basis as all other terminal switch cars as far as per diem reclaim is concerned, and also submitted a proposed revision to the code of switching reclaim rules, to include a definition for trap or ferry cars; also a revision of Rule 2, Section 1, to conform to the recommended changes in Per Diem Rule 5, with respect to trap or ferry cars, and a revision of Rule 6. Changes and interpretations of per diem Rules 7, 8 and 11 were also submitted.

As a part of its report, the committee submitted a recommended form for per diem and reclaim summaries, and a list of several hundred assigned reporting marks for railway and privately owned cars.

Demurrage

A. G. Thomason, demurrage commissioner of the New England Demurrage Commission, presented an address covering an "Historical Review of the Demurrage Rules and Their Application", which outlined the importance of clear and uninvolved demurrage rules to the shippers and the railways alike.

The report of the Committee on Demurrage, Storage, Reconsignment and Diversion, was presented by Chairman J. F. Porterfield, general superintendent of transportation, Illinois Central. The report included a number of proposed revisions of demurrage rules, and indicated that the committee was receiving close cooperation from the National Industrial Traffic League, through its demurrage committee. A comprehensive set of approved forms to be used in connection with the application of demurrage and storage was submitted, with the recommendation that the forms be issued in circular form for the information of all railways.

Chairman F. W. Humes, superintendent of stations and transfers, Pennsylvania, presented the report of the Committee on Freight Handling Service. This committee has made a complete study of the key-sack method for loading sacked commodities, such as sugar, rice, coffee, beans, peanuts, etc., and has developed a pamphlet giving the proper method of loading and of preparation of the cars, together with a series of photographs showing various stages of loading. This pamphlet will be issued as a circular by the transportation division.

An important work was also completed by the committee, in aiding in the preparation of a dictionary of the recommended standard terms to be used in describing loading and bracing methods for fresh fruits and vegetables. The lack of such a list of standard terms has made it impracticable, hitherto, to collect reliable information as to inefficient loading and bracing methods, and to take the necessary corrective action. This dictionary was included as part of the report together with diagrams illustrating the terms defined.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading amounted to 1,061,416 cars during the week ended May 25, an increase of 40,013 cars as compared with the loading of freight in the corresponding week of last year, and an increase of 34,627 cars as compared with the corresponding week's total in 1927. Loading of all commodities, excepting livestock, was larger than a year ago. Livestock, forest products, coal and grain showed decreases as compared with 1927 total. Loading in the Southern district only was smaller than in the corresponding week of last year. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

Revenue Freight Car Loading

Week Ended Saturday, May 25, 1929

Districts	1929	1928	1927
Eastern	252,167	243,131	236,302
Allegheny	223,447	209,904	213,720
Pocahontas	58,524	57,214	62,891
Southern	141,339	142,650	152,066
Northwestern	167,760	157,679	156,283
Central Western	140,660	137,514	134,034
Southwestern	77,519	73,311	71,493
Total West. Dists.	385,939	368,504	361,810
Total All Roads	1,061,416	1,021,403	1,026,789
Commodities			
Grain and Grain Products	39,320	38,916	39,746
Live Stock	25,425	26,150	28,341
Coal	163,337	162,917	165,710
Coke	12,475	9,913	10,493
Forest Products	69,291	68,509	72,008
Ore	73,485	58,851	62,475
Mdse. L.C.L.	262,144	259,764	261,547
Miscellaneous	415,939	396,383	386,469
May 25	1,061,416	1,021,403	1,026,789
May 18	1,046,179	1,003,288	1,027,498
May 11	1,047,922	1,002,411	1,029,424
May 4	1,050,192	978,053	1,024,761
April 27	1,051,728	963,007	1,021,576
Cumulative total, 21 weeks	20,336,367	19,537,658	20,525,186

The freight car surplus averaged 216,313 cars during the period ended May 23, as compared with 210,200 cars on May 15. The total included 105,456 box cars, 65,782 coal cars, 25,477 stock cars and 13,387 refrigerator cars.

Car Loading in Canada

Revenue car loadings at stations in Canada for the week ended May 25 totalled 64,318 cars, a decrease from the previous week of 3,562 cars and an increase over the same week last year of 2,266 cars.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada		
May 25, 1929	64,318	41,658
May 18, 1929	67,880	42,610
May 11, 1929	68,245	42,495
May 26, 1928	62,052	38,466
Cumulative Totals for Canada		
May 25, 1929	1,334,334	907,838
May 26, 1928	1,323,249	838,906
May 28, 1927	1,264,498	816,507



"Erie Limited" Leaving Jersey City

Erie Inaugurates 25-Hr. New York-Chicago Passenger Service

The "Erie Limited" is completely modern in equipment—Club-car privileges for coach passengers

ON Sunday, June 2, the Erie inaugurated a new 25-hr. passenger-train service between New York and Chicago, which marks the fulfilment of a plan for improved passenger service, preparations for which have been under way since the management of the road was taken over by J. J. Bernet. Westbound, the new train leaves Jersey City at 9:10 a.m., ferry connections leaving from West Twenty-Third street and Chambers street, New York, at 8:35 and 8:40 a.m., respectively, eastern standard time, and arrives at Dearborn street station, Chicago, at 8:25 a.m., central standard time, the following morning. East bound, the train leaves the Dearborn station at 5:35 p.m., central standard time, and arrives at Jersey City at 7:10 p.m., eastern standard time, the following evening. Ferry connections arrive at Chambers street and West Twenty-Third street, New York, at 7:22 and 7:50 p.m., respectively. There are thirty-eight intermediate stops in each direction.

With the inauguration of the Erie Limited, the Southern Tier Express, the Erie's daylight train between New York and Buffalo, N. Y., has been discontinued and the Erie Limited will handle all of the business which was formerly handled by this train, in equipment which will be operated between New York and Buffalo, via Hornell, without change. New equipment of the same character as that operating in the New York and Chicago service will be used in the New York and Buffalo service. The Buffalo connection arrives there at 7:35 p.m., eastern standard time, and leaves at 8:55 a.m., eastern standard time.

The Erie serves a large number of communities through southern New York, Pennsylvania and Ohio, notably Binghamton, N. Y., Elmira, Olean and Jamestown; Corry, Pa., Meadville and Greenville, and Youngstown, Ohio, and Akron. From many of these and other cities along its line it has long been necessary for travelers seeking fast modern transportation to Chi-



The "Erie Limited" on Public Inspection

Officers in the group are, below: C. C. Howard, passenger traffic manager (fourth from the left), and G. C. Manning, freight traffic manager (fifth from the left). Above: F. A. Waldron, assistant general passenger agent (second from the left); H. J. Bordwell, assistant general manager (third from the left), and A. W. Michelbach, division passenger agent, Elmira, N. Y. (fifth from the left).

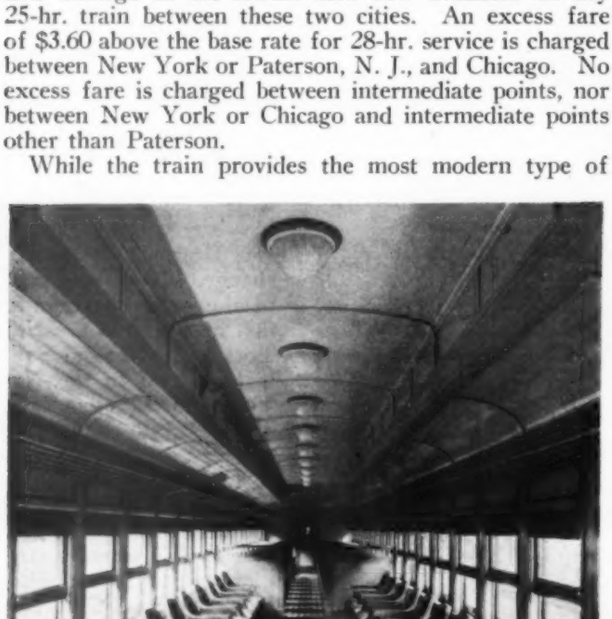


Interior of One of the Coaches

cago or New York to undergo the inconvenience of getting over to some other railroad, either by means of local railroad travel or some form of road transport. The new train is designed to give such communities a satisfactory direct service to Chicago and New York. It also provides a thoroughly modern service between New York and Chicago at the lowest fare now available on any 25-hr. train between these two cities. An excess fare of $3.60 above the base rate for 28-hr. service is charged between New York or Paterson, N. J., and Chicago. No excess fare is charged between intermediate points, nor between New York or Chicago and intermediate points other than Paterson.

While the train provides the most modern type of rolling stock for the comfort of Pullman passengers, it is notable for the facilities which have been provided for the comfort of coach passengers. Each train includes a club-lounge car for the exclusive use of coach passengers, with no extra charge, which is in part fitted with individual club-car chairs and in part with the customary type of coach seats. The other coaches in each train are provided with the new individual type revolving seats. All of the coaches are equipped with both hot and cold running water, as well as with electric fans.

The passenger facilities of each train will consist of one club-lounge smoking car, two coaches, a 10-section sleeping car, with one drawing room and two compartments, a 10-section parlor-lounge observation car and a dining car between New York and Chicago. Westbound, it will also carry one 12-section sleeping car each between Youngstown and Chicago and Akron and Chicago.



The Club Lounge for Coach Passengers



The Parlor Lounge in the Observation Car

Eastbound, the Akron sleeper will be attached to train No. 8, which leaves Chicago at 10:35 p.m. The equipment for the New York-Buffalo service consists of one coach and one Pullman parlor car.

Decorations and Finish

The coaches of the Erie Limited are of all-steel construction, 70 ft. long over end sills, and were built three years ago. Ten of these cars have been re-equipped and refinished at the Buffalo shops for the new service. Three of them are fitted as club-lounge smoking cars, the forward half of each car being equipped with the usual type of coach seats and the rear half with club-car chairs. The seats and the chairs are upholstered in genuine Spanish leather in a light tone of blue. The floors are covered with a blue checkered tile, harmonizing with the color of the upholstering material. The other seven coaches are fitted with the individual type revolving seats which are upholstered in a deep blue figured

plush. The floors of these cars are completely covered with a figured carpet of harmonizing tones.

The walls of all of the coaches are finished in two tones of gray, with the ceilings and deck panels finished in white, relieved with narrow stripes of bright blue, which, with the blue of the upholstery, impart a suggestion of hazy blue to the entire wall and ceiling finish.

The dining cars are of all-steel construction and are thoroughly modern in equipment and appointments. The interiors of these cars are finished in a two-tone green, relieved by striping of red and gold. In addition to the enclosed ceiling lights, a safety wall-light fixture with parchment shade is located above the window at each table. The carpets of the dining cars have a pattern of large figures in color against a dark green.

Each of the coaches, including the lounge cars, is provided with a men's and a women's toilet and lavatory. These are all provided with hot and cold water and with vending machines from which soap, towels and combs may be secured.

New Pullman Cars

The Pullman cars are all newly built and include all of the features which are characteristic of modern Pullman equipment. The berths have permanent headboards



The Dining Car

and are equipped with spring mattresses. The dressing rooms are equipped with porcelain plumbing fixtures. The drawing room and compartments in the New York-Chicago sleeping car are all fitted with communicating doors so that they may be used either singly or ensuite.

A touch of luxuriousness is added to the train by the use of carpeted aisle strips across the vestibules of the coaches, diner and Pullman cars, thus providing a completely carpeted passageway throughout the train. The personnel of each train includes a train porter. The porters are distinctively uniformed in gray, with the name of the train worked in gold letters on black facing at the breast pocket of the uniform jacket.

Other Equipment

In addition to the passenger-carrying cars, three 70-ft. express cars and two 70-ft. mail cars were completely refinished for use on the Erie Limited. These cars received an exterior paint and varnish finish. The exterior finish is in Duco. The entire train is finished in Pullman green, which is the standard color for all Erie coaches.

The trains will be handled with light Pacific type locomotives which are equipped with stokers and feedwater heaters. The train is equipped throughout with UC brakes.

Prior to the inauguration of the Erie Limited one of the new trains made a two weeks' tour, with stops at each point where the Erie Limited stops to receive and discharge passengers, for the inspection of the public in these communities. During this trip a lively interest was displayed in the train which was visited by 96,000 people. Up to date these trains have completely fulfilled the expectations of the railroad, extra equipment having been required to meet the demands for accommodations.

Diversified Farm Production Stressed at A. R. D. A. Meeting

THE production of agricultural commodities other than the primary staples has assumed such a position of importance, from a railroad revenue standpoint, that the gross income from certain groups of products, the importance of which as a traffic source is considered to be at least partially due to development work, exceeds that derived from certain staple products. Z. G. Hopkins, assistant to the president of the Missouri-Kansas-Texas, made the foregoing statement in a paper presented before the annual meeting of the American Railway Development Association at Houston, Tex., on May 22, 23 and 24.

Mr. Hopkins pointed out the importance to the railroads of agricultural stabilization through diversification of sources of farm income. It is evident, from experience during the years since the close of the World War, that continued expansion of agricultural staples, such as wheat and cotton, is likely to be accompanied by a continuing surplus of these staples. The result will be that America may produce more bushels of wheat and more bales of cotton without an addition to its income from agriculture. Development work, which encourages the production of incidental commodities, which will be absorbed by current consumption, is at once an effective means of farm relief and stabilization of freight revenues, he said.

During 1928, he continued, railroad freight revenues from grapes, peaches, and several other domestic fresh fruits, exceeded those received from the movement of cotton, cottonseed, meal and cake. The revenue from the fruit group totaled $58,645,531 and that from cotton and its products totaled $58,415,408. He made a similar comparison to show that the revenue from citrus fruits, lemons, apples, canteloupes, watermelons, cabbage, onions, tomatoes and peanuts, which aggregated $162,174,332, practically equalled the revenue from wheat and wheat flour, which was $162,353,130. As an added fact he showed that the revenue in 1928 from the movement of poultry, eggs, butter and cheese, amounting to $44,490,976, was only slightly less than that from cattle and calves, which was $50,000,000, and in excess by the $38,251,439 of gross revenue derived from the transportation of hogs.

Advertising a Terminal Railroad

Among the papers presented before the industrial section of the meeting was one by J. L. Sigmon, industrial agent of the Kentucky & Indiana Terminal, on "Advertising Industrial Development." He suggested the placing of advertising in trade magazines to reach the class of manufacturers whom it is desired to attract to a particular locality.

He outlined the methods used by the Kentucky &

Indiana Terminal over a period of 10 years. The advertising of this company was at first confined to local newspapers and the distribution of pamphlets at the Kentucky State Fair at Louisville, Ky. Later a booklet was prepared containing statistics concerning Louisville and the Terminal railroad which was mailed to members of the local civic organizations. In addition to advertising factory sites, an attempt was made to educate the business men of Louisville on the advantages of their city as an industrial center. Twice a year a special train was operated over the railroad, with stops at one or two industries.

Since 1926, when a "Talk Louisville Week" was staged, in which the railroad participated, the terminal has issued two industrial maps and a descriptive booklet, for all of which there has been a large demand. Mr. Sigmon considered that the development work of the railroad has been materially furthered by the activity of various groups of business men organized for promotional purposes, and including the appropriation of $50,000 by the state legislature to advertise Kentucky. While he suggested that the more common forms of advertising are of value he stated that the majority of the industrial prospects have been reached through confidential information from friends of the railroad. He stressed the importance of a wide distribution of all advertising material.

George M. Crowson, assistant to the vice-president of the Illinois Central, in a talk on "The Railroads' Part in the Development of the South," called attention to the importance of good will in gaining and retaining patronage, and in resisting harmful legislation and regulation. The railroads' greatest claim to good will, he said, is their contribution to progress and prosperity.

T. A. Hoverstad, development agent of the Chicago Great Western, in discussing the subject "Shall the Agricultural Development Man Solicit Business for His Railroad," declared that because of the newness of the field it is unwise to limit development work to definite boundaries or to attempt to standardize practices. A summary of his remarks follows:

The first principle of the development agent should be the creation of new traffic. Edmund Pennington, former president of the Minneapolis, St. Paul & Sault Ste. Marie, once characterized the products which are the most profitable to a railroad to transport as those which the farmer can produce most profitably. He recognized that the prosperity of its patrons is essential to the successful operation of a railroad.

New tonnage may be produced by encouraging the production of better livestock and crops and the placing of larger acreages under cultivation, but when those results have been attained it is solely the function of traffic solicitation to bring the products to the railroad for transportation. In addition the development agent must make the net income of farms and factories as large as is consistent with good business. The encouragement of good citizenship is yet another function of the development department. By aiding in raising the standard of living of its patrons the railroad increases their economic wants and adds to the number and variety of articles which it may transport.

In speaking on the technique of handling agricultural demonstration trains, A. J. Dexter, agricultural development agent of the Northern Pacific, declared that that railroad has always followed the policy of operating such trains only under the direction of a state agricultural college and as a part of such an institution's general program of agricultural extension and education. Later it is essential that college workers follow the train and fix the message carried by its speakers and exhibits.

He stressed the danger of allowing particular products to be advertised on the train by commercial and semi-commercial organizations and advised the submission of all exhibits and subject matter of talks to the co-operating college. A recent dairy-poultry train in North Dakota was operated in conjunction with that agricultural college of that state, a poultry research society, two farm building equipment companies, various commercial clubs and creamery and produce companies. As much responsibility as possible for the success of the meetings is placed upon the local communities by having them use paid newspaper advertising, act as hosts at a luncheon and make all local arrangements. The director of extension of the agricultural college usually acts as chairman of the meetings, while publicity is frequently handled by a college publicity man to insure impartial publicity for co-operating agencies. Co-operating agencies are encouraged to undertake follow-up work on their own initiative on the theory that the demonstration train is simply a means of preparing the field in a spectacular way for future and more intensive educational measures.

* * * *

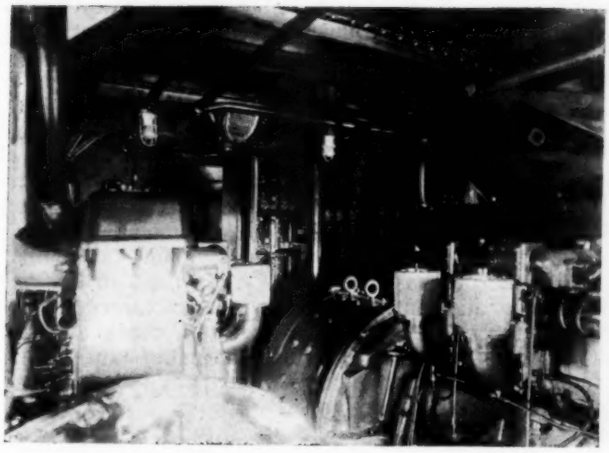


The New York Central's "Twentieth Century Limited" near Pine Junction, Ind.

How to Apply Rail Motor Cars Successfully

Design and maintenance are important factors

By Charles O. Guernsey
Chief Engineer, Automotive Car Division
The J. G. Brill Company



UNTIL about five years ago, rail motor cars on the market were intended only for the lightest of branch line service. Within the past five years the growth has been extremely rapid, with the result that motor cars are now operating in at least the following classes of service:

1—Branch-line passenger, baggage, express and mail. Examples of this class of service using rail cars of various capacities, can be found on the majority of the American railroads.

2—Local main-line passenger service, requiring train consists of not more than four or five cars. Typical applications of this character are also becoming quite general. The Easton, Pa., to Jersey City, N. J., and Buffalo, N. Y., to Sayre, Pa., runs on the Lehigh Valley, and various runs on the Seaboard Air Line, may be mentioned.

3—De luxe limited service where the train is limited to three or four cars. This class of service is best exemplified by recent installations on the Chicago Great Western. Various other roads have the same service under active consideration. The Southern Pacific has just purchased equipment for high-speed suburban service out of San Francisco.

4—Milk-train service. Probably the best example of this class of service is the 500-hp. motor-unit used by the Lehigh & Hudson River on its run from Easton, Pa., to Greycourt, N. Y., handling six milk cars in addition to a coach and a combination mail and express car.

5—Local freight service on light lines. The Lehigh & Hudson River just mentioned also handles this class of service; likewise equipments have been purchased or are under consideration by a number of other roads for operating local freight and mixed service on secondary lines. By so doing it is possible for them to eliminate on these lines facilities that are required for the supply of the steam locomotive.

6—Mixed service on light lines.

7—Light and medium switching service.

Each of the above classifications can again be subdivided on the basis of horsepower and speed required.

Undoubtedly there are applications falling within the above classifications to which motor rail cars are not adapted. The suitability of the rail car for any given service and its advantages in that particular service can only be determined after a thorough study of the conditions.

Success of Motor Cars Depends on Three Factors

The success of rail motor cars depends on three major factors, namely application, design and maintenance. A study of operating conditions by the proper railroad authorities, supplemented by the application engineering service which the manufacturer can supply, can predetermine rather accurately what may be expected of rail motor cars of particular types in a particular service. After suitable equipment has been selected, it is of course necessary for the operating officers to hold the conditions of operation reasonably near to those contemplated in the original application.

The advantages of rail motor equipment are many. Among the more important ones are: (1) Low cost of operation; (2) high percentage of serviceability to scheduled mileage; (3) comparatively low cost of maintenance; (4) reduced stand-by losses; (5) elimination (under certain conditions) of expensive coal, ash, water and other terminal facilities, as well as hosteling service, and (6) cleanliness and general attractiveness of the service.

The design of power equipments and accessories should follow the manufacturer's standard. The expense incident of the development of suitable power and transmission equipments for cars of this type is extremely high because of the tremendous investment in tools, patterns, dies, engineering, experimental work and testing, which is required to insure a satisfactory well-balanced unit. Any attempt on the part of the purchaser to specify particular features of construction or particular specialties in the power apparatus obviously upsets the harmonious, balanced design, which the manufacturer has spent large sums in perfecting.

Rail Motor Car Should Be Purchased as a Unit

A great deal of emphasis can profitably be placed on the importance of proper balance and co-ordination between the various units which enter into the make-up of a complete self-propelled car. Ordinarily the design of the engine, the electric transmission equipment, the engine accessories, the cooling and exhaust systems, etc., are brought through together, each one arranged to dovetail with the other. If this harmonious balance as determined by the manufacturer can be maintained, a better product will result. Furthermore, by reason of the manufacturer's ability to produce highly specialized parts in quantities, carry them in stock, and supply duplicate designs to different purchasers, he will be able to sell at a much lower price than is the case if special features are insisted upon.

The best results at the least expense will be obtained if this equipment is bought as a complete, trade-marked, guaranteed design, just as an automobile or a typewriter is purchased.

It is obvious that in any industry which has developed as rapidly and is as young as the present rail car industry, the manufacturers have not all proceeded along the same lines. Any attempt, therefore, to stipulate design features found in one equipment to be supplied in another will be harmful, rather than helpful. Furthermore, any attempt at this time to set up arbitrary standards for the rating of engines, the speed at which they should be operated, or other design functions, would be at least premature. The automobile industry is the largest user of the internal combusion engine and yet the purchaser still finds it desirable to buy on the basis of his confidence in the manufacturer and the manufacturer's rating of his own equipment, and on the experience record which this manufacturer has established, rather than attempt to pass judgment on individual items of design. By reason of the variations in design which exist, motor rail car equipment should be purchased on the same basis.

For the same reason the entire industry should, so far as possible, follow the precedents established by the older users of the internal combustion engine, such as automotive, marine and industrial users. These industries have spent millions of dollars developing the internal combustion engine to its present state. They have tried almost every conceivable kind of engine, have experimented with all sorts of substitute fuels, and as a result of the tremendous experience thus accumulated, have brought the internal combusion engine to its present state of perfection. The rail car industry would do well, therefore, to examine the record of various developments as have been tried and found wanting in times past, before attempting to do pioneer work in connection with engines or their accessories, or fuels. At the same time it is necessary for the designer to take into account the difference in operating conditions, the difference in size of units required, the higher power factor under which rail car engines work, and other distinguishing characteristics, and make due provision for meeting these new conditions. This may be illustrated. As compared with the automobile or motor truck engine the rail car engine is far larger; as compared with the marine engine, it must run far more hours between overhauls and must be operated at a higher water-jacket temperature; as compared with stationary engines, it must be far lighter, but without sacrificing any of the life which is built into a well designed stationary engine. An engine designed for other classes of service and transplanted into this field is very apt to have serious shortcomings. The best results can be obtained if the engine is developed to fit the particular conditions of speed, power factor, cooling conditions, mounting, exhaust arrangement, etc., with which it is intended to be used.

Proper Maintenance Important

Probably the most important factor making for success or failure of rail cars is maintenance. If a well organized, systematic inspection and maintenance schedule is carried out, motor rail equipment is capable of operating over a very high percentage of scheduled mileage. In numerous applications, an availability of 95 per cent or better over a period of several years has been achieved with particular designs, whereas other cars of identical design have had a far lower factor of availability primarily due to the difference in maintenance. It is also true, especially so with this class of equipment, that minor adjustments made at the proper time may save heavy expense and delays in service which would otherwise result.

The manufacturer attempts, by offering technical advice, by maintaining a staff of field men, and by the preparation of elaborate instruction books, to assist the railroads in the maintenance of this class of equipment. Nevertheless, the burden of the maintenance falls on the mechanical department of the railroad and the manufacturer can only assist.

The rail motor car, if of proper design, properly applied and properly maintained can be profitably used in many classes of railroad service. The application should be carefully studied to secure the most desirable unit for the service in question, the manufacturer's design should be followed, and a thorough, systematic, well organized maintenance force, consisting of men familiar with this class of equipment, should be set up. On such a basis the rail motor car, within its proper sphere, will be found profitable to the operator and attractive to the public.

* * * *



A Chicago, Milwaukee, St. Paul & Pacific Train Leaving Union Station, Chicago

Cotton Belt Prepares to Reduce Operating Expenses

Grade reduction, yard improvements, higher maintenance standards, heavier equipment to make increasing high-grade traffic profitable

THE St. Louis Southwestern System in 1928 had operating revenues of $25,575,765 and operating expenses of $19,330,633—5.7 per cent and 4.5 per cent respectively above the 1927 totals. Net operating revenue totaled $6,245,132, an increase of 9.3 per cent over the preceding year. Railway operating income was almost one-half million dollars greater than in 1927, but this gain was not carried through to net railway operating income, since it was more than offset by an increase of $567,047 for the hire of freight cars.

Net railway operating income totaled $4,093,463 and gross income $4,413,307, the latter total being $306,814 less than in 1927, largely by reason of a reduction in interest income. On the other hand, interest charges on unfunded debt also decreased by almost two hundred thousand dollars so that net income, $1,759,362, was only $88,452 less than in the preceding year. Of the net income, dividend appropriations (5 per cent on $19,893,650 of preferred stock outstanding) totaled $994,682, the same as in the preceding year, and the net addition to corporate surplus for the year was $697,608. Corporate surplus at the end of 1928 stood at $28,191,714, which may be compared with the total outstanding capital stock (common and preferred) of $36,249,750 and funded debt of $67,706,750.

The Cotton Belt's traffic in 1928 was divided among the various classes of commodities as follows: Agricultural products, 17.54 per cent; animal products, 1.00 per cent; mine products, 24.80 per cent (gravel, sand and stone 15.88 per cent, crude petroleum, 3.63 per cent and bituminous coal, 3.22 per cent); manufactures and miscellaneous, 30.58 per cent; and l.c.l., 2.69 per cent. President Upthegrove, in the annual report for 1928, calls attention to the fact that the Cotton Belt's territory is still in the development stage and that, while the volume of traffic tends to grow at an average rate of 4 per cent, this increase is not steady; fluctuations in the volume of business are great—sometimes violent. The nature of the traffic has been undergoing a considerable change, from bulk commodities to the lighter-loading farm and manufactured products. Thirty-six per cent of 1928 tonnage was overhead traffic. The change in the character of the business and competition have made necessary increased speed in handling and have brought about some tendency toward decreased train-loading.

Comparisons of tonnage handled, ton-miles, average earnings per ton-mile, operating revenues and other pertinent operating and financial statistics are given in Table I, covering the period since 1915. In Table II freight service operating performance for 1928 is compared with that of 1927.

This latter table shows conditions to be on the whole favorable in spite of the difficulties arising from the increase in lighter-loading commodities. Gross ton-miles increased 23.6 per cent over 1927 and net ton-miles 19.3 per cent. This increased business was handled with an increase of 21.9 per cent in freight train-miles and 10.1 per cent in freight train-hours. Car-miles per car-day rose 23.4 per cent to an average of 49.1 and net ton-miles per car-day increased 18.6 per cent to a total of 671. There was a slight decrease (2.2 per cent) in net tons per train. Fuel efficiency and locomotive utilization showed material increases. The figures indicate a great improvement in the character of service without a disproportionate unfavorable showing in the factors which determine the expense of providing such service.

The increase in the Cotton Belt's volume of business and the great improvement in the character of its service (some freight train schedules being reduced by as much as 20 per cent during 1928 alone) have brought the railroad to the point where, according to President Upthegrove, roadway and equipment must be improved, grades reduced and terminal facilities improved if this class of business is to continue being handled at a profit. Improvements or additions made or projected designed to react favorably upon expenses include the following:

The acquisition of control of three short line railways in the St. Francis basin in northeast Arkansas which, with some new construction, will shorten the company's route between St. Louis and Memphis by 88 miles and the distance from important cities in the St. Francis basin to St. Louis by 50 miles and to Memphis by 110 miles.

The relocation of 67 miles of the line extending from Mt. Pleasant, Tex., southward to the junction at Tyler, reducing maximum grades from two per cent to 1.2 momentum—the line being completely reballasted and laid with new 85-lb. rail—

Table I—St. Louis Southwestern System Operating Results, Selected Items, 1916 to 1928

Year ended Dec. 31	Mileage	Revenue tons	Revenue ton miles	Average haul	Rev. per ton mile cents	Rev. train load	Rev. car load	Total operating revenues	Total operating expenses	Net operating revenue	Operating ratio	Net after charges
1916	1,817	4,103,575	958,902,362	234	1.09	347	16.36	13,964,462	9,409,384	4,555,078	67.38	2,230,107
1917	1,817	5,120,930	1,273,784,094	249	1.03	426	18.60	17,448,824	11,000,559	6,448,265	63.04	3,878,250
1918	1,813	4,905,137	1,241,307,723	253	1.16	447	21.02	19,627,056	15,888,609	3,738,447	80.95	917,061
1919	1,785	4,781,562	1,140,762,995	239	1.39	460	19.51	20,689,423	18,565,587	2,123,835	89.73	1,417,331
1920	1,806	6,382,915	1,816,243,738	285	1.39	520	21.87	31,057,823	25,972,252	5,085,572	83.63	2,939,025
1921	1,786	5,155,041	1,296,500,811	252	1.61	464	20.56	25,153,462	19,112,553	6,040,909	75.98	2,477,685
1922	1,776	5,353,997	1,535,404,954	287	1.45	506	20.24	26,159,914	20,007,426	6,152,489	76.48	2,256,679
1923	1,777	6,365,897	1,697,769,155	267	1.45	511	19.98	29,551,120	21,990,212	7,560,908	74.41	3,401,092
1924	1,777	5,901,480	1,423,436,363	241	1.53	504	19.11	26,326,291	20,027,914	6,298,377	76.08	2,365,162
1925	1,750	5,848,720	1,423,436,363	252	1.50	529	18.86	26,132,262	19,925,859	6,206,404	76.25	2,379,292
1926	1,748	6,026,111	1,479,328,300	245	1.49	543	19.00	25,692,826	19,353,457	6,339,369	75.33	2,405,540
1927	1,748	5,559,400	1,395,902,590	251	1.49	515	18.36	24,206,525	18,494,571	5,711,954	76.40	1,847,814
1928	1,748	6,186,668	1,644,534,997	266	1.37	507	18.22	25,575,765	19,330,633	6,245,132	75.58	1,759,362

enabling the same tonnage trains to be handled through from Tyler to Pine Bluff, Ark. Relocation and reconstruction will then proceed from Tyler westward to Corsicana.

The construction of a new and more efficient yard at Tyler.

A projected new yard at Jonesboro, Ark.

The contemplated acquisition during the next few years of 15 heavy freight locomotives, 16 passenger train cars, 2360 freight train cars and 183 miscellaneous units of company service equipment.

A contemplated expenditure of $575,000 for new shop and power plant machinery.

The proposed reduction in grade from 0.5 per cent to 0.3 per cent (deferred until the above mentioned grade revision projects in Texas are completed).

It can be safely concluded that all the above-mentioned improvements will have a favorable effect upon operating expenses in general and transportation expenses in particular. They should also have a favorable effect on the volume of traffic. Moreover, bringing the line and equipment up to a higher standard, it is expected will lead to a reduction in average annual maintenance expenses after 1930 estimated at $1,700,000 based on present traffic and costs.

Table II—Comparison of Selected Freight Operating Statistics

St. Louis Southwestern (Not Including Texas Lines)

	1928	1927	Per cent of change Inc.	Dec.
Mileage operated	929	929	...	...
Gross ton-miles (thousands)	3,721,258	3,010,034	23.6	
Net ton-miles (thousands)	1,410,423	1,181,943	19.3	
Freight train-miles (thousands)	2,080	1,706	21.9	
Freight locomotive-miles (thousands)	2,116	1,744	21.3	
Freight car-miles (thousands)	103,077	83,169	23.9	
Freight train-hours	135,636	123,143	10.1	
Car-miles per day	49.1	39.8	23.4	
Net tons per loaded car	20.6	20.5	0.5	
Per cent loaded to total car-miles	66.5	69.3		4.1
Net ton-miles per car-day	671	566	18.6	
Freight cars per train	50.5	49.7	1.6	
Gross tons per train	1,789	1,765	1.4	
Net tons per train	678	693		2.2
Train speed, miles per train-hour	15.3	13.9	10.1	
Gross ton-miles per train-hour	27,436	24,443	...	...
Net ton-miles per train-hour	10,399	9,598	8.3	
Lb. coal per 1,000 gross ton-miles	92	98		6.1
Loco. miles per loco. day	80.1	59.7	34.2	
Per cent freight locos. unserviceable	19.9	24.8		19.8
Per cent freight cars unserviceable	5.8	4.6	26.1	

The Cotton Belt has never been an important carrier of through passengers. Since it is local business which has been most seriously affected by highway competition the company naturally has suffered heavily. Business has declined at the rate of 15 per cent on the average since 1918, while passenger train-miles have remained almost constant. The company in 1927 had lost about 75 per cent of this business to the highway. Of this 75 per cent, 50 per cent, it was estimated, was moving in private automobiles and 25 per cent by motor coach. The company believed that by providing more comfortable, safer, more attractive motor coaches all the business handled both by train and motor coach could be handled by the latter with but a slight increase in motor coach miles. Accordingly, a subsidiary, the Southwestern Transportation Company, was organized which, at the end of April, 1929, had franchises covering 1590 route miles paralleling almost all the Cotton Belt's rail lines. Investment in franchises and equipment totaled $1,000,000. The railroad last December and January reduced its passenger service by 317,550 train-miles annually and further reductions are contemplated. In addition the transportation company is offering truck service in co-ordination with the railroad's local freight service. The result should be important operating economies on the part of the railroad and in addition it is expected that the transportation company will earn a reasonable return on the investment.

Looking Backward

Fifty Years Ago

Canadian Pacific engineers have arrived at Victoria, B. C., to explore for a line of railroad through the Peace River country. It is claimed that a line through that section would be 650 miles shorter than any other transcontinental line now under way or projected.—*Railway Age*, June 5, 1879.

Ten cents per hundred pounds is now the rate openly charged for carrying grain from Chicago to New York by rail. Deducting 3½ cents for terminal charges and bridge toll, it is found that the railways receive about 6 cents for hauling 100 lbs., 980 miles, or about 0.12 cents per ton per mile.—*Railway Age*, June 5, 1879.

The Purchasing Agents' Association, which met in annual convention at Louisville, Ky., on May 20, 21 and 22, discussed verbally a number of subjects, including the following: Cylinder and valve lubricants, animal oils as compared with mineral oils; bolster springs; methods of carrying stock; manufactured material, should it be made by the company or bought; old material, its classification and distribution; methods of distributing stationery and printing.—*Railroad Gazette*, June, 1879.

Twenty-Five Years Ago

Major Charles De Lano Hines' series of "Letters From an Old Railway Official to His Son, A Division Superintendent", in which the father offers advice and counsel to his son who has just been placed in charge of a division begin to appear serially from week to week in the Railway Age.—*Railway Age*, June 10, 1904.

H. C. Pearce, assistant purchasing agent of the Chicago, Rock Island & Pacific, has been appointed general storekeeper of that road, with office at Chicago. J. E. Hutchison, trainmaster of the St. Louis-San Francisco at Sherman, Tex., has been transferred to Sapulpa, I. T. J. F. Deimling has resigned as chief engineer of the Lake Superior & Ishpeming to become track engineer of the Pere Marquette at Detroit, Mich.—*Railway Age*, June 10, 1904.

Ten Years Ago

Brigadier General W. W. Atterbury arrived at Hoboken, N. J., from France on May 31, and was at once discharged from the army. After a short vacation he will resume his duties as vice-president of the Pennsylvania.—*Railway Age*, June 6, 1919.

The power of the President, exercised through the director general of railroads, to establish rates for application to intrastate as well as to interstate traffic, superseding the authority of the states, was upheld by unanimous decision of the United States Supreme Court rendered on June 2. The decision specifically upheld the rate increases made by Director General McAdoo in June, 1918. The court lost little time in arriving at a conclusion in these cases, which were argued on May 5.—*Railway Age*, June 6, 1919.

Chairman John J. Esch, of the House Committee on Interstate and Foreign Commerce, introduced in the House on June 1 a bill to further amend the act to regulate commerce, embodying ideas for the regulation of the railroads after their return to private management. This bill, which was also introduced in the Senate by Senator Pomerene, represents what may be termed the conservative school that favors a minimum of disturbance of the interstate commerce law while bringing about a greater degree of co-operation and of joint use of facilities between railroads, as opposed to the more radical ideas which have been expressed and will be embodied in a bill by Chairman Cummins.—*Railway Age*, June 6, 1919.

Communications and Books

A Dispatcher's Viewpoint

DOVER, N. H.

TO THE EDITOR:

With several years' experience as a train dispatcher together with some study and experience with railroad statistics I cannot believe that the majority of the present day train dispatchers do not understand or appreciate the gross ton-mile records as a measuring stick of efficient operation, as indicated in your recent editorial.

Why criticise the dispatchers when wage costs go up perhaps two per cent, fuel consumption one per cent, if the gross ton-miles go up ten per cent? With equal reason why commend us when the gross ton-miles go up somewhat if the wage cost and fuel figures go up to a greater extent than the gross ton miles do.

It is not in my opinion the ignorance of the train dispatchers that prevents them accomplishing more toward efficient operation, but the restrictions placed upon their activities.

Who is there on a railroad today that is any more acquainted with just what each train and each crew is hauling for tonnage, the time they make, and their general performance, than the train dispatcher? Why not listen to what he has to offer, in the way of suggestions for more efficient operation, instead of tying his hands with restrictions? He must not do this, he must not do that, yet he must maintain the efficiency.

A DISPATCHER.

Why Not Carry Passengers' Automobiles in Baggage Cars?

JERSEY CITY, N. J.

TO THE EDITOR:

As a partial solution to the problem of decreased railway passenger earnings, I suggest the expansion of automobile carrying service in baggage cars as inaugurated last year by the Southern Pacific between San Francisco and certain vacation resorts in California.

Last summer a friend of the writer spent two weeks vacationing in the Adirondack mountains. He took the Friday night boat from New York to Albany and shipped his car on the same boat. From Albany he drove to his destination, some eight hours distant, arriving Saturday night. Coming home two weeks later, he started Sunday morning, drove to Albany and came to New York on the Sunday night boat. He spent 13 days at his camp. Had he driven the entire distance going and coming, he would have had only 11 days in camp. By train he could have made the trip overnight and thus enjoyed 15 days in camp. He wanted his car with him, and, had automobile carrying service in baggage cars been available, would have taken advantage of it. He would have purchased three round-trip tickets, a Pullman section each way and space for his automobile in the baggage car. As matters stood, the railroads realized nothing from this man, who, like many others, objects to long drives in hot weather through dense traffic, especially when such driving deprives him of enjoyable days which otherwise would be spent at a vacation resort.

I believe that the establishment of automobile carrying service by the railroads from New York to northern New England and New York State vacation resorts would tend greatly to revive passenger travel to those points, and would stimulate additional interest in vacationing there. Many people enjoy spending their vacations among the Maine lakes or in the White mountains of New Hampshire and are fond of motoring on pleasant days throughout the adjoining country. They do not relish, however, spending two or three days driving from their homes to these places, and are very likely, therefore, to turn to a nearby seashore resort within three or four hours actual driving time, where they can have their cars with them. Such a condition does not stimulate railroad passenger traffic.

In the Middle West, Detroit, Toledo, Cincinnati, Cleveland, Chicago and St. Louis provide the patronage for the popular vacation resorts of Michigan and Wisconsin. Florida during the winter months is a mecca for winter weary people from both the East and Middle West. Most of them want their cars with them while vacationing and under present conditions spend valuable days driving to and from their destinations. Would it not pay the railroads to haul these cars and derive the revenue from that source and also from the tickets purchased by the accompanying passengers? The automobile can be checked at an excess baggage rate plus one or more passenger fares.

A 75-foot baggage car can accommodate five average touring cars with the two end ones tilted. Many baggage cars already have end doors and it is not an expensive operation to supply them to a car not so fitted. A pair of light steel skids with channel runners forms the equipment to load and unload automobiles. The skids can be carried in the baggage car when not in use. No unloading platforms or other elaborate paraphernali is necessary. It is simple and should be effective. Why isn't it tried east of California?

GEORGE ZABRISKIE.

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Electrification of Steam Railroads, by Kent T. Healy. "The purpose is to present the subject in a way that combines the description of physical characteristics of the elements of electrification with the analysis of economic problems and the operating performance of both electrification and electric operation." p. v. 395 p. Pub. by McGraw-Hill Book Co., New York City, $4.

Employee Thrift and Investment Plans. The plans used on two railroads are included in the number studied. 114 p. Pub. by National Industrial Conference Board, Inc., New York City. $1.

A New Era for British Railways—A Study of the Railways Act, 1921, from an American Standpoint, With Special Reference to Amalgamation, by Howard C. Kidd. The author is professor of commerce at the University of Pittsburgh and he discusses the passing of the Railways Act, the need for railway economies, the plan of railway grouping, the process of amalgamation, and the economies of amalgamation. 158 p. Pub. by Ernest Benn, Ltd., London, England. 7 shillings, sixpence.

Periodical Articles

The Airplane Frees a Continent—Wings are Solving South America's Transportation Difficulties, by John W. Jackson. Map of airways in South America, p. 20, in Mexico, Central America, Cuba, and the West Indies, p. 22. "South America is skipping the railroad era in transportation"—p. 20. Nation's Business, June 1929, p. 19-22, 186, 188.

Locating "Rail Cancer." Popular description of the car for detecting transverse fissures. Illustrated. Literary Digest, June 1, 1929, p. 20-21.

New Trade Route Opened in Central America, by Robert M. Lane. "The new line of the International Railways of Central America, which will connect San Salvador, near the Pacific Coast, with Puerto Barrios on the east coast of Guatemala, is rapidly nearing completion." p. 571. Commerce Reports, June 3, 1929, p. 571-573.

Odds and Ends of Railroading

The Canadian National has coined a new and apt name for the "overnight sleepers" having a series of single bedrooms. It is "chambrette", a French word meaning a small apartment.

Once upon a time E. H. Gary, later head of the United States Steel Corporation, was local attorney for the Illinois Central in Chicago, W. J. Harahan, now president of the Chesapeake & Ohio, was roadmaster and trainmaster at Kankakee, Ill., Stuyvesant Fish was president, J. C. Welling and J. T. Harahan were its vice-presidents, and John F. Wallace, later chief engineer of the Panama Canal, was its chief engineer. That was back in 1892.

Fish Line Stops Train

What would have been a perfect on-time record on the Portland Division of the Boston & Maine recently, was spoiled by a slender fish line. A spring fisherman on the right of way between Lee, N. H., and Barrington, in throwing back his line to make a cast, tangled it between a battery wire and a telephone wire. The short-circuit caused by the wet line put two block signals in the stop position and held a train for 12 minutes. It was the day's only delay.

It Happened in New England

The Rutland recently was requested to redeem a ticket 43 years old that once was good for six miles of travel. Thomas J. Whalen, ticket agent, was at the window of the Rutland station when a woman presented a ticket that had been issued at East Dorset on January 7, 1886, by the Bennington & Rutland Railroad, since absorbed by the Rutland line. Someone had traveled as far as Rutland on the ticket. The woman wanted to obtain passage to Proctor on the remaining unused portion. Whalen paid the woman's fare, 22 cents, and added the ticket to his souvenirs.

Forty-year-old Ticket Sent In For Refund

Wanting to know the value of a Michigan Central excursion ticket, which was issued forty years ago, and which had never been used, Mrs. Annie Carter, Philadelphia, sent the ticket in to R. D. Heideman, present ticket agent at Battle Creek, Mich. with the request that the ticket be redeemed, if there was any refund on it. She sent the ticket with a brief note about the refund, but made no explanation of the long disappearance of the ticket. It was stamped with the date on the back, September 1, 1888, and was good "from Battle Creek, or Cresco, to Detroit and return." John W. Bailey, present mayor of Battle Creek, was then freight agent; O. W. Ruggles was general passenger agent at the time, and the local agent for the Michigan Central then was O. E. Jones.

The Mystery of Pullman Christenings

The daughters of railroad builders have been favorite themes of an American mythology. Miss Florence Pullman, whose father made the sleeping cars, did not escape. As Mrs. Frank O. Lowden, she is still pursued by one of the myths. It is the bit of folklore that credits her with naming the sleeping cars, and it lives in its own denial, the latest version being that she "named only one."

Mrs. Lowden smiled when she heard it. "So this time I named only one," she said. "That is a story which will not down. It has followed me through life. Originally I was supposed to have named hundreds; that was denied, and now they have me naming one. But I never named any."

Mrs. Lowden's reputed authorship of Pullman nomenclature survives and defies denials. The most recent repetition was in an article by Isaac Marcosson, in a popular weekly. Mr. Marcosson took care to explain that the Pullman cars really are named by a committee of the company, with suggestions, frequently, from executives of railroad lines. He asserted that he mentioned the story about Mrs. Lowden "mainly to show its inaccuracy." He went on, "The truth is that Mrs. Lowden named only one car." Mrs. Lowden says she did not name that many.

"When that story was started I was a girl," said Mrs. Lowden, "yet wherever I go, even today, somebody asks me about my work of naming the cars. When the story was new I received numerous letters. One was from a young woman who offered to furnish me with half the names if I would furnish her with half my compensation, as she was supporting her mother."

Mrs. Lowden's princely remuneration was an important part of the story. It varied according to the version told, but Mrs. Lowden was generally supposed to be receiving anywhere from $20 to $100 for each car she named.

"The public was giving me credit for quite a large stint," said Mrs. Lowden. "The naming of the cars is a regular part of the work of the organization, and involves considerable system. The lists of names are classified, I understand, according to whether they are names of historical celebrities, names from literature, or names of places.

"While the story was at the height of its vogue one of the Pullman officials said in greeting me, 'Well, I wish you did furnish those names. Finding new names for the cars is one of our big problems. We should appreciate any suggestions you care to give us.' However, I did not give any.

"The story was denied repeatedly, but, just as repeatedly, it became evident that the denials did not travel as far as the story has traveled."—Chicago Daily News.

World's Finest Revolver?

J. H. Burnett, district special agent, Rock Island Lines, El Reno, Okla., who recently was elected secretary-treasurer of the Sheriffs' and Peace Officers' Association of Oklahoma, is the proud possessor of a new 44 calibre pearl-handled revolver that is unique in many ways. In addition to having his name and address carved in the pearl handle by one of his men,



J. H. Burnett and His Unusual Revolver

Patrolman C. H. Kennedy of Fort Worth, this revolver is decorated with 14 chipped diamonds, 22 rubies, 9 gold dollars, the picture of the owner and his finger print, and the Rock Island emblem. All of this decorative work was performed by Patrolman Kennedy. The prize revolver was a gift to Mr. Burnett by one of his admiring friends last January, after which it was turned over to Patrolman Kennedy for "dressing up."



The Southern Pacific's "Sunset Limited" near Redlands, Cal.

DANIEL JACKSON, colored member of the Illinois Commerce Commission, died at Chicago on May 18.

THE SENATE on May 29 passed the bill, S. 669, to provide for the institution of court proceedings for the purpose of obtaining an adjustment of the Northern Pacific land grant controversy. A similar bill is pending in the House.

WITH THE COMPLETION of the new Powell's Creek bridge the Richmond Fredericksburg & Potomac, according to E. M. Hastings, chief engineer, has retired the last of its wooden bridges. The new structure was placed in service on May 24.

THE PULLMAN COMPANY has increased the wages of porters and maids $5 a month, taking effect June 1. The agreement also provides for certain increases for men who work on other than their normal days and for overtime worked because of train delays. Other minor changes in working conditions are also included.

Makes $50,000 Donation to Engineering Library

James H. McGraw, chairman of the McGraw-Hill publishing companies, has donated $50,000 to the endowment fund of the library of the United Enginering Society in New York. The committee is endeavoring to increase the fund for the library from the present $150,000 to $2,000,000.

Appropriation for Retroactive Mail Pay

Both houses of Congress have passed a resolution making a supplemental appropriation of the sums necessary to make retroactive payments to the railroads for carrying the United States mails for the years 1924 to 1928 under the increased rates prescribed by the Interstate Commerce Commission, which the government withheld until the Supreme Court had sustained the validity of the commission's order. The resolution appropriates $39,000,000 plus unexpended balances of the appropriations for mail transportation for the years '927 and 1928, for payments due the railroads generally amounting to about $48,000,000. It also appropriates $3,997,089 for the payment of judgments rendered by the Court of Claims in cases brought by several roads. The resolution provides that where the companies waive claims for interest the sums paid shall be considered, for income-tax purposes, as income for the taxable year in which payment is actually received.

I.C.C. Bar Association Proposed

A temporary organization with a view to the formation of a bar association of attorneys and other practitioners admitted to practice before the Interstate Commerce Commission under its new regulations was recently formed at a meeting in Washington. Charles C. McChord, a former member of the commission, was elected temporary chairman and Paul A. Walker, commerce attorney for the Oklahoma commission, temporary secretary. An organization committee also was appointed. The commission on May 29 promulgated the first instalment of the names of those admitted to practice before it, including nine former commissioners.

Correction

In the article entitled "Russian Railways Being Rehabilitated" by Charles Muchnic, which appeared in the *Railway Age* of June 1, through a typographical error, it was incorrectly stated that in the fiscal year 1928-29 the estimated gross revenues of the Russian railways would be approximately one-sixteenth of the gross revenues of the railways of the United States during the past year. Actually, the estimate is that they will be about one-sixth of the gross revenues of the American railways.

In the same article it was also stated that in one place a large dining room was provided where railway employees could obtain a wholesome meal for 25 to 40 kopeks, "which corresponds to 25 or 40 cents in the United States." This should have read "25 or 40 kopeks, which corresponds in food purchasing power to 25 or 40 cents in the United States."

Grade Crossing Elimination in Pennsylvania

Close to a million dollars a month has been spent on grade crossing elimination in the State of Pennsylvania during the last 15 years, according to Dr. H. Herbert Snow, chief engineer of the Pennsylvania Public Service Commission. The total expenditure for this purpose has been to date $210,000,000. This figure represents the portions spent by the state, public utilities and municipalities involved.

There are no statistics available on the number of crossings abolished prior to 1923, but during that year and since then, 367 eliminations have been accomplished, according to compilation of the commission's bureau of accidents. A record was established last year with the elimination of 100 crossings. During the same six-year period, 64 new crossings, mostly industrial sidings of slight danger potentiality were established in the state.

Lackawanna Proceeds With Electrification Program

The Lackawanna has abandoned its contemplated plan to build a power plant for the generation of electric power for the operation of its suburban trains, and instead, will purchase the required electrical energy from the public service companies serving the territory.

With this decision comes the announcement that contracts covering a period of 20 years have been made with the Public Service Electric & Gas Company, the Jersey Central Power & Light Company and the New Jersey Power & Light Company.

As previously announced, the lines which will be electrified include the Morris & Essex division from Hoboken to Dover; the Passaic & Delaware division, from Summit to Gladstone, and the Montclair branch, a total of 78 miles of road and 173 miles of track.

The 3,000 volt direct current system of electrification with over-head wires has been chosen for this service as the one best suited for both suburban and long distance main line operation. In event that it is later deemed advisable to carry electrification of the line over the Pocono mountains to Scranton, Pa., this system can be extended without having to be rebuilt.

Officers of the road further announce that new equipment consisting of all steel coaches and motor equipment will be purchased. Requests for bids for the structural steel work for the necessary over-head bridges also will be announced

soon, this being followed by asking for bids for the electrical apparatus for installation in the sub and tie stations which are to be located at Bergen Junction, Newark, Summit, Bernardsville and Denville. Actual construction work on the project is expected to be under way within the next month or six weeks. With the delivery of this new equipment, all trains operating between Hoboken and Dover via the Passaic-Paterson-Boonton line, which will not be electrified at present, also will be fully fitted with steel equipment.

The C. P. R. in April

Operating net of the Canadian Pacific for April showed an increase of $786,033 over that for April of last year, standing at $3,190,566, as against $2,404,533. Gross earnings by the same comparison showed an increase of $2,233,271, while operating expenses were higher by $1,447,237.

For the four months of the current year ended with April, there is shown an increase in operating net of $315,312, when compared with the corresponding four-month period of last year. Gross earnings are shown higher by $2,994,913, while operating expenses are up by $2,679,600.

The following table shows the earnings, expenses and net profits for the month of April, with comparisons:

	April		
	1929	1928	Inc.
Gross	$17,529,372	$15,296,101	$2,233,271
Expenses	14,338,805	12,891,568	1,447,237
Net	$3,190,566	$2,404,533	$786,033
	Four Months Ending		
	April, '29	April, '28	Inc.
Gross	$67,391,802	$64,396,889	$2,994,913
Expenses	54,557,655	51,878,055	2,679,600
Net	$10,834,146	$10,518,834	$315,312

The announcement as to what Canadian railways would do to meet reduced rates on export wheat flour made by the United States lines recently was outlined in a statement issued in Montreal last week by the Canadian Pacific and Canadian National.

The statement reads:

"The United States railways, at the request of the administration in Washington, have announced reductions in rates on wheat flour only for export, following their recent reduction on wheat only from Lake Erie ports to the Atlantic seaboard for export. The Canadian railways have decided to meet such reduced rates on wheat flour from bay ports and intermediate points to Canadian ports and are asking the Board of Railway Commissioners for Canada for permission to issue revised tariff on one day's notice so that the rates may be effective on the same date as the reduced rates take effect in the United States. These reduced rates are of a temporary nature and expire September 30 next."

Under an order passed by the Board of Railway Commissioners at Ottawa last week, the Canadian National and Canadian Pacific Railways are authorized to publish, on one day's notice tariffs containing reduced rates on grain and wheat flour from Ontario shipping points to the Atlantic seaboard for export to meet the reduction made by the United States railways.

The amount of the reduction in rates is not specified in the order, but according to information received by the board, rates from Bay ports to Canadian ports will be reduced by 3.33 cents per one hundred pounds below present rates. The railway companies, it is understood, will publish their tariffs today and the reduced rates will come into effect on Wednesday.

Under the usual procedure Canadian railways can only issue revised tariffs on three days' notice, but the order passed yesterday respecting grain and wheat flour enables the issue of revised tariffs on one day's notice.

Hearing at St. Louis on M. P. Lease Proposals

Unified operation of the 22 subsidiary companies of the Missouri Pacific would effect a saving of approximately $1,000,000 a year, L. W. Baldwin, president of those railroads testified at an Interstate Commerce Commission hearing at St. Louis, Mo., on June 3. Other Missouri Pacific officers also testified before H. C. Davis, commission examiner, on the application to lease all of the subsidiaries to the parent company for operating purposes.

Several short roads which have intervened and are seeking to compel the Missouri Pacific to purchase properties which it does not desire would be burdensome to the railroad and a tax upon the commerce of the country, said Mr. Baldwin. "In many instances the construction of hard surfaced roads paralleling such short lines not only has materially affected their traffic but really has done away with their former standing as a necessary transportation facility. If the commission finds that the public convenience and necessity require the operation of a short line by a trunk line it should require the owner of the short line, after first putting it in good operating condition, to turn the short line property over to the trunk line to operate for the account of the short line for a given period of time, perhaps five years, keeping accurate accounting under the orders of the commission, with a view to determining the worth of the property."

The Missouri Pacific now owns 92 per cent of the New Orleans, Texas & Mexico which in turn and through subsidiaries owns the other properties. The remaining eight per cent of stock is owned by about 320 stockholders.

The Missouri Pacific has suffered traffic losses through opening of the Port of Corpus Christi, Tex.; by construction of hard surfaced roads, and by the invasion of the lower Rio Grande valley by the Southern Pacific with the approval of the commission. Traffic losses due to the opening of the Corpus Christi port were estimated to have cost the Missouri Pacific $460,000 in 1928. Rate reductions since 1924 have decreased the revenues approximately $9,000 annually, while wage increases in the same length of time have increased operating costs approximately $1,100,000 on the Gulf Coast Lines, the International-Great Northern and the San Antonio Uvalde & Gulf.

The Missouri Pacific and subsidiaries now carry average stocks of materials and supplies valued at $15,000,000 and it was estimated that inventories on these items can be reduced at least 10 per cent if the lease proposal is approved. Mr. Baldwin declared that savings and improvement of service through approval of the leases by the Commission can be accomplished by economies in accounting procedure, a more efficient distribution of locomotives and cars, and the elimination of all delays incident to junction transfers and records.

Federal Employers' Liability Law in Kentucky

A boy between 15 and 16 years of age worked as a section hand in interstate commerce on the Chesapeake & Ohio in Kentucky. He was directed by his father, who was his foreman, to get water for his companions. In returning he passed between or under standing cars; the train moved unexpectedly and he was run over and sustained permanent injury. A Kentucky law of 1922 forbids employment of a child under 16 on any railroad and provides punishments for employers, parents or guardians. Suit was brought under the Federal Employers' Liability Act, and a jury awarded $17,500. The Kentucky Court of Appeals affirmed the judgment, 233 Ky. 154. The case came before the Supreme Court of the United States on certiorari, and the question was whether the plaintiff's employment in violation of the state statute made the railroad guilty of negligence justifying a recovery under the Federal act.

The Supreme Court said that while the state has power to forbid such employment in interstate commerce, it is a different question whether a violation of such a State act constitutes negligence *per se*, or negligence at all under the Federal Employers' Liability Act. The Kentucky act is a criminal act and there is nothing to indicate that it was intended to apply to the subject of negligence as between common carriers and their employees. It is true that in Kentucky and in a number of other States it is held that a violation of this or a similar State act is negligence *per se*, and such a construction is to be respected where the State law is to be enforced. But in the field of the relations between an interstate carrier and its interstate employees, it becomes a federal question and is to be decided exclusively as such.

The court found no federal case on the question, but cited four cases in the state courts of California, Michigan, Arkansas and Minnesota on somewhat similar statutes which seemed to show that their effect is confined "to the government of the relation between the employer and the employee, between the common carrier and the interstate commerce agent. A different rule might well apply where the issue is with reference to the duties of the common carrier in dealing with the public, with passengers or with strangers. The cases cited were decided only after a full examination of the cases on the subject of the Federal Employers' Liability Act in this court...."

"We think that the statute of Kentucky limiting the age of employees and punishing its violation has no bearing on the civil liability of a railway to its employees injured in interstate commerce and that application of it in this case was error."

The judgment of the state court was reversed.—C. & O. v Stapleton. Decided May 27, 1929. Opinion by Mr. Chief Justice Taft.

Plans for Hudson River Bridge Not Approved

The Secretary of War has concurred in the action of Major General Edgar Jadwin, chief of engineers, on the application of the North River Bridge Company to construct a bridge across the Hudson river at Fifty-seventh street, New York city, by which the applicant was informed that plans will not be approved for a vertical clearance of less than 200 ft. at the center and 185 ft. at the pierhead lines. The plans presented by the company, which in various forms have been under consideration for several years, provided for a vertical clearance at high water of 175 ft. at the center of the main span, 147.8 ft. at the pierhead line on the New Jersey side and 152 ft. on the New York side. The Chief of Engineers submitted a report stating the conclusion that to practically protect and preserve the present navigation of that river and assure reasonably free, easy and uninterrupted navigation for the future the minimum clearances stated should be required, and that the vertical clearances proposed would result in interference with such navigation.

A public hearing to consider the application was held at New York on September 9, 1927, by a board of engineer officers, and the proposal has since had careful study. Attention was recently attracted to the plan by publication of a report that the bridge, if built, would be used by the Baltimore & Ohio and other railroads now reaching the New Jersey side of the river.

"Nowhere is the protection of navigation more important than at New York, which is preeminent among the ports of the United States and of the world as well," says the report.

"This situation must be looked at in a broad way if the commercial growth of the country is not to be hampered. The population of the United States is increasing steadily year by year. Its waterborne commerce is likewise increasing steadily. In New York the larger ships in general have been moving their berthing space upstream. The Island of Manhattan is becoming more and more congested. Freight should not be sent across the lower Hudson River for New England that can go around the city if such sending interferes unreasonably with navigation. It would be unwise to encourage the development of freight terminals on the east side of the Hudson river to handle freight bound for the interior of the country which must be gotten to the mainland by railroads or trucks crossing the river on bridges which would interfere unreasonably with navigation. It is more logical that vessels landing on the east side of the river should carry largely passengers, freight, and raw material intended for consumption or manufacture by the people on the Island of Manhattan. Freight intended for interior points will naturally gravitate toward the west side of the river for direct handling from ship to freight car.

"These probable developments render it increasingly important that no unnecessary bar should be put in the way of the great vessels coming to this port laden with freight for Manhattan, or for the interior of the country. To work against natural tendencies and interfere with the logical development of facilities for transferring this freight between ship and rail will hamper the development of the port of New York, considering both sides thereof, and will work against the best interests of that enormous extent of the country which now utilizes the port facilities of New York in making waterborne shipments."

Net for April Over 6 Per Cent

Class I railroads in April had a net railway operating income of $94,204,113, which, for that month, was at the annual rate of return of 6.08 per cent on their property investment, according to reports compiled by the Bureau of Railway Economics. In April, 1928, this income was $70,617,896, or only 4.63 per cent on property investment.

Operating revenues for the month amounted to $513,954,965, compared with $475,054,096 in April, 1928, or an increase of 8.2 per cent. Operating expenses totaled $376,493,833, compared with $363,888,486 in the same month in 1928, or an increase of 3.5 per cent.

Class I railroads in April paid $32,847,703 in taxes, an increase of $2,075,545 or 6.7 per cent over the same month in 1928. This brought the total tax bill for four months to $128,101,942, an increase of $7,978,415 or 6.6 per cent above that of the corresponding period in 1928.

Twenty two Class I railroads operated at a loss in April, of which eight were in the Eastern district, two in the Southern and twelve in the Western.

For the first four months in 1929 the net railway operating income amounted to $353,745,996, at the rate of 5.54 per cent. During the corresponding period of 1928, the net was $287,988,314, or 4.58 per cent.

Operating revenues for the four months amounted to $1,993,624,219, an increase of 5.1 per cent. Operating expenses totaled $1,473,255,957, an increase of 1.5 per cent.

The net railway operating income by districts for the first four months, with the percentage of return based on property investment on an annual basis, was as follows:

New England Region	$15,607,323	5.75%
Great Lakes Region	65,388,105	5.64%
Central Eastern Region	81,221,581	6.12%
Pocahontas Region	26,115,001	8.98%
Total Eastern District	188,332,010	6.18%
Total Southern District	48,258,261	4.34%
Northwestern Region	23,330,969	4.72%
Central Western Region	64,921,768	5.89%
Southwestern Region	28,902,988	4.65%
Total Western District	117,155,725	5.28%
United States	353,745,996	5.54%

Class I railroads in the Eastern district for the first four months had a net of $188,332,010, at the rate of 6.18 per cent. For the same period in 1928, their net was $143,382,426 or 4.78 per cent. Operating revenues for the four months totaled $998,038,740, an increase of 6.6 per cent, while operating expenses totaled $731,958,199, an increase of 1.8 per cent. Eastern roads for April had a net of $51,813,522, compared with $40,579,715 in April, 1928.

Class I railroads in the Southern district for the first four months had a net of $48,258,261, at the rate of 4.34 per cent. For the same period in 1928, their net operating income amounted to $44,142,888, which was at the annual rate of 4.04 per cent. Operating revenues for the four months amounted to $266,621,900, an increase of 1.4 per cent, while operating expenses totaled $197,062,300 a decrease of seven-tenths of one per cent. The net in the Southern district in April amounted to $13,519,568, while in the same month in 1928 it was $10,732,915.

Class I railroads in the Western district for the four months had a net of $117,155,725, which was at the annual rate of 5.28 per cent. For the first four months in 1928, they in that district had a net of $100,463,000 which was at the rate of 4.59 per cent. Operating revenues in the Western district for the four months amounted to $728,963,579, an increase of 4.5 per cent, while operating expenses were $544,235,458, an increase of 2 per cent.

For April, the net of the Class I railroads in the Western district amounted to $28,871,023. The net of the same roads in April, 1928, totaled $19,305,266.

CLASS I RAILROADS—UNITED STATES

	1929	1928
Month of April		
Total operating revenues	$513,954,965	$475,054,096
Total operating expenses	376,493,833	363,888,486
Taxes	32,847,703	30,772,158
Net railway operating income	94,204,113	70,617,896
Operating ratio—per cent	73.25	76.60
Rate of return on prop. investment	6.08%	4.63%
Four months ended April 30th		
Total operating revenues	$1,993,624,219	$1,896,761,351
Total operating expenses	1,473,255,957	1,450,895,524
Taxes	128,101,942	120,123,527
Net railway operating income	353,745,996	287,988,314
Operating ratio—per cent	73.90	76.49
Rate of return on prop. investment	5.54%	4.58%

Georgia Negligence Statute Too Severe

In an action for death in a crossing collision in Georgia between a Western & Atlantic train and a motor truck, the railroad appealed to the Supreme Court of the United States from an adverse judgment by the Georgia Supreme Court. The question in the case was whether the due process clause of the Fourteenth Amendment is violated by Sec. 2780 of the Georgia Civil Code, which makes a railroad company liable for any damage by the operation of its trains "unless the company shall make it appear that their agents have exercised all ordinary and reasonable care and diligence, the presumption in all cases being against the company."

The plaintiff charged that the collision

(*Continued on page 1350*)

Revenues and Expenses of Railways

MONTH OF APRIL AND FOUR MONTHS OF CALENDAR YEAR 1929

Name of road		Av. mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1928.
Akron, Canton & Youngstown	April	171	$318,225	$101	$331,770	$39,513	$30,524	$13,734	$81,571	$18,018	$183,360	55.3	$148,410	$129,378	$95,379	$34,060
	4 mos.	171	1,235,097	546	1,277,638	159,315	116,435	54,004	312,609	64,816	705,601	55.2	572,037	492,345	351,814	164,741
Atchison, Topeka & Santa Fe	April	9,392	12,612,252	2,566,347	16,809,258	3,253,443	3,363,363	399,637	4,765,750	438,513	12,193,572	72.5	4,615,686	3,251,707	3,356,636	1,742,264
	4 mos.	9,391	48,401,007	11,333,990	65,568,209	9,765,687	13,262,327	1,647,975	19,611,137	1,802,652	46,088,765	70.3	19,479,444	13,847,306	14,220,325	9,435,124
Gulf, Colorado & Santa Fe	April	1,944	1,751,680	159,388	2,075,723	559,976	431,517	55,799	675,239	82,743	1,781,476	85.8	294,247	201,487	100,699	173,643
	4 mos.	1,944	7,439,970	678,674	8,679,935	2,020,099	1,752,307	222,757	2,797,113	292,168	7,035,196	81.1	1,644,739	1,284,776	858,157	316,107
Panhandle & Santa Fe	April	1,024	858,386	86,345	1,016,737	376,499	197,968	12,191	297,812	26,849	907,538	89.3	109,199	88,918	15,203	—115,879
	4 mos.	1,024	3,456,958	353,402	4,086,073	886,551	754,849	48,040	1,205,976	107,093	2,989,372	73.2	1,096,701	933,088	644,231	3,548
Atlanta & West Point	April	93	189,689	43,821	269,342	31,460	39,194	13,123	96,768	14,612	200,409	74.4	68,933	57,448	41,689	23,096
	4 mos.	93	641,897	191,636	971,276	112,886	167,849	49,894	378,017	57,196	784,766	80.8	186,510	131,941	80,245	133,945
Western of Alabama	April	133	218,845	45,768	294,272	51,863	47,393	13,550	8,8845	14,799	221,102	75.1	73,170	61,025	57,218	65,650
	4 mos.	133	699,059	207,669	1,020,798	185,877	202,154	51,046	351,247	57,647	864,204	84.6	156,594	101,899	103,360	310,538
Atlanta, Birmingham & Coast	April	639	344,136	19,257	409,945	101,468	81,758	32,007	155,567	18,562	400,554	97.7	9,391	—7,430	—23,130	—26,775
	4 mos.	639	1,279,148	79,076	1,525,518	351,078	323,620	113,240	625,276	74,781	1,531,319	100.4	—5,801	—73,229	—130,136	—104,666
Atlantic Coast Line	April	5,152	6,024,608	1,337,862	8,028,067	902,755	1,167,634	143,392	2,318,456	175,929	4,771,041	59.4	3,257,026	2,503,073	2,274,171	1,060,083
	4 mos.	5,149	21,384,841	6,300,097	30,274,335	3,461,795	4,450,556	666,880	9,075,151	708,759	18,697,457	61.8	11,576,878	8,918,322	8,423,971	4,890,400
Charleston & Western Carolina	April	342	325,124	8,740	346,670	59,384	42,102	6,087	105,005	7,323	219,901	63.4	126,769	100,264	90,336	49,761
	4 mos.	342	1,085,332	39,259	1,169,256	247,758	148,998	27,585	404,563	26,938	855,837	73.2	313,419	222,410	213,579	129,970
Baltimore & Ohio	April	5,639	16,358,643	1,825,440	19,585,523	2,328,764	4,268,340	510,434	6,750,638	705,358	14,742,836	75.3	4,842,687	3,800,662	3,519,290	3,094,650
	4 mos.	5,639	64,048,410	7,074,843	76,256,392	9,314,964	16,617,637	1,987,082	28,323,187	2,696,967	58,545,512	76.8	17,710,880	13,589,315	12,740,861	9,337,016
Baltimore & Ohio Chic. Term.	April	82	.....	.....	388,839	42,124	51,821	2,543	181,190	16,536	298,566	76.8	90,273	26,247	126,223	102,138
	4 mos.	82	.....	.....	1,371,864	180,667	183,843	9,136	732,135	69,529	1,197,372	87.3	174,492	—59,356	339,495	390,471
Staten Island Rapid Transit	April	23	81,657	124,615	218,841	33,824	18,212	2,210	104,281	15,285	173,812	79.4	45,029	28,026	—9,035	15,962
	4 mos.	23	401,078	460,661	907,371	115,584	73,763	8,273	425,881	61,893	685,394	75.5	221,977	149,966	3,237	24,526
Bangor & Aroostook	April	619	615,009	58,833	700,239	100,066	141,397	7,835	165,603	33,586	450,758	64.4	249,481	194,959	205,085	220,876
	4 mos.	619	2,737,938	257,918	3,100,001	406,694	467,258	24,568	744,755	117,670	1,771,229	57.1	1,328,772	1,077,397	1,077,086	998,940
Belt Ry. Co. of Chicago	April	48	.....	.....	636,325	74,232	70,201	4,385	284,636	21,534	454,988	71.5	181,337	119,459	144,543	148,342
	4 mos.	48	.....	.....	2,653,543	251,548	309,830	15,690	1,289,211	64,373	1,930,652	72.8	722,891	510,181	606,648	574,359
Bessemer & Lake Erie	April	227	1,056,297	7,803	1,093,842	166,498	324,025	14,073	276,875	35,408	811,743	74.2	282,099	224,759	255,766	—75,352
	4 mos.	227	3,205,329	31,544	3,320,519	343,706	1,277,546	55,975	1,053,871	142,402	2,837,374	85.4	483,145	352,819	536,589	—157,926
Bingham & Garfield	April	33	45,823	.....	49,100	6,673	5,375	1,712	10,816	4,340	29,141	59.4	19,959	—25,871	—9,156	13,993
	4 mos.	33	178,376	.....	187,942	26,513	18,033	6,544	42,074	17,651	111,545	59.4	76,397	4,631	72,972	64,700
Boston & Maine	April	2,080	4,468,993	1,223,767	6,543,220	1,049,637	1,363,736	94,283	2,242,232	212,709	4,981,478	76.1	1,561,742	1,252,201	1,049,920	989,299
	4 mos.	2,080	16,312,616	5,208,721	24,701,942	3,832,639	4,361,834	358,010	9,067,985	874,580	18,557,380	75.1	6,144,562	4,914,082	4,066,572	4,009,279
Brooklyn East. Dist. Terminal	April	11	120,893	.....	123,608	13,748	12,856	859	43,701	6,415	77,579	62.8	46,029	39,187	39,187	35,632
	4 mos.	11	466,127	.....	476,490	34,765	45,371	3,140	168,374	26,486	278,136	58.4	198,354	166,247	166,247	165,117
Buffalo & Susquehanna	April	253	126,008	1,065	137,070	30,053	50,176	2,043	41,879	7,940	132,091	96.4	4,979	2,879	18,886	3,000
	4 mos.	253	577,517	4,715	622,420	111,780	194,505	7,477	189,210	31,509	534,481	85.9	87,939	98,632	166,161	56,903
Buffalo, Rochester & Pittsburgh	April	601	1,253,460	63,627	1,368,168	135,758	407,351	32,366	503,342	45,540	1,125,664	82.3	242,504	212,477	232,091	235,864
	4 mos.	601	5,114,422	284,786	5,576,445	511,559	1,610,172	131,457	2,088,498	182,770	4,530,323	81.2	1,046,122	885,921	963,115	982,999
Canadian Pacific Lines in Maine	April	233	232,524	35,940	282,910	107,742	51,142	7,338	110,171	4,177	280,570	99.1	2,340	—12,160	—43,700	—41,127
	4 mos.	233	1,241,486	145,548	1,438,865	192,316	279,503	26,264	613,967	16,811	1,128,861	78.4	310,004	252,004	128,259	130,451
Canadian Pacific Lines in Vermont	April	85	124,160	33,968	181,821	74,280	32,567	1,877	95,011	2,348	205,790	113.2	—23,969	—27,989	—62,299	—60,199
	4 mos.	85	462,215	134,757	679,987	132,328	136,585	7,094	385,615	9,326	670,655	98.6	9,332	—6,748	—134,095	—188,368
Central of Georgia	April	1,944	1,786,296	304,867	2,320,546	383,883	350,799	59,433	824,264	87,934	1,723,905	74.3	596,641	459,013	427,530	332,621
	4 mos.	1,944	6,314,646	1,325,581	8,494,623	1,154,194	1,411,889	270,931	3,151,337	353,733	6,407,014	75.4	2,087,609	1,562,661	1,531,562	1,466,519
Central New Jersey	April	690	3,874,712	648,873	4,880,775	465,756	1,104,674	54,451	1,806,839	124,893	3,584,588	73.4	1,296,187	843,115	695,594	881,226
	4 mos.	690	14,515,775	2,617,239	18,377,089	1,691,574	4,265,640	234,988	7,150,616	522,424	13,990,345	76.1	4,386,744	3,190,414	2,566,307	2,596,705
Central Vermont	April	412	580,954	97,129	756,401	98,221	103,595	20,089	299,254	28,579	551,714	72.9	204,687	188,540	195,741	—248,714
	4 mos.	412	2,049,512	388,897	2,706,452	341,046	388,838	69,385	1,157,704	98,715	2,064,201	76.3	642,251	577,526	603,578	—1,247,901
Chesapeake & Ohio	April	2,730	8,517,592	512,640	9,502,538	1,519,622	2,266,381	136,967	2,539,840	282,653	6,766,158	71.2	2,736,380	2,040,726	2,172,881	2,097,543
	4 mos.	2,730	37,180,623	2,082,180	40,835,330	6,135,175	9,382,188	533,144	10,739,741	1,123,538	28,006,885	68.6	12,828,445	10,049,233	10,769,204	8,825,112
Chicago & Alton	April	1,028	1,587,011	420,072	2,243,717	234,129	517,624	71,938	847,955	60,107	1,743,007	77.7	300,710	385,334	184,163	66,398
	4 mos.	1,028	6,484,114	1,830,425	9,255,301	832,307	2,073,558	303,013	3,559,362	244,888	7,093,319	76.6	2,161,982	1,729,741	1,061,975	561,575
Chicago & Eastern Illinois	April	946	1,513,069	240,397	1,930,353	265,092	421,531	85,139	744,881	69,688	1,602,929	83.0	327,424	196,429	44,131	—121,521
	4 mos.	946	6,326,257	1,114,030	8,148,620	966,831	1,694,377	330,183	3,191,830	283,349	6,525,905	80.1	1,622,715	1,128,792	538,256	222,216
Chicago & Illinois Midland	April	131	236,600	5,309	247,976	29,959	54,854	19,269	73,216	18,443	195,627	78.9	52,349	44,414	49,516	—58,622
	4 mos.	131	945,461	26,890	1,001,955	122,379	219,811	73,403	276,805	73,546	765,793	76.4	236,162	204,422	198,023	170,528
Chicago & North Western	April	8,466	8,793,184	1,775,970	11,945,790	1,961,350	2,453,521	205,104	4,503,288	376,439	9,567,514	80.1	2,378,276	1,602,693	1,496,297	454,187
	4 mos.	8,466	32,676,480	7,644,669	45,367,306	6,009,204	9,465,877	798,188	18,855,912	1,505,251	36,911,253	81.4	8,456,053	5,350,950	4,526,680	4,049,509
Chicago, Burlington & Quincy	April	9,374	9,534,714	1,332,764	12,551,182	2,209,705	1,840,868	277,674	4,037,970	369,788	8,799,493	70.1	3,751,689	2,777,744	2,510,208	1,569,567
	4 mos.	9,374	40,298,468	5,645,211	51,211,304	5,241,776	7,660,861	1,036,191	17,215,716	1,483,587	32,930,302	64.3	18,281,002	13,712,245	12,909,961	10,842,702

Revenues and Expenses of Railways

MONTH OF APRIL AND FOUR MONTHS OF CALENDAR YEAR 1929—CONTINUED

Name of road		Av. mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1928.
Chicago Great Western	April	1,495	$1,595,119	$229,601	$1,995,220	$308,126	$396,582	$76,916	$809,516	$63,096	$1,664,592	83.4	$330,628	$252,641	$69,150	$70,986
	4 mos.	1,495	6,262,658	959,010	7,876,250	860,464	1,482,562	322,719	3,560,331	234,467	6,508,181	82.6	1,368,069	1,039,835	342,666	472,621
Chicago, Indianapolis & Louisville	April	650	1,157,524	163,067	1,472,473	155,913	312,839	40,719	498,597	36,274	1,055,130	71.7	417,343	324,375	205,747	208,070
	4 mos.	650	4,599,288	620,494	5,818,475	549,291	1,239,230	155,892	2,197,844	148,708	4,340,791	74.6	1,477,684	1,148,264	638,797	737,204
Chicago, Mil., St. Paul & Pacific	April	11,247	10,720,282	1,239,724	13,327,486	2,302,499	2,687,687	308,906	4,778,132	382,635	10,516,164	78.9	2,811,322	2,020,786	1,669,749	1,270,507
	4 mos.	11,250	41,446,151	5,369,027	52,034,971	6,571,155	10,305,017	1,205,805	20,299,946	1,499,790	40,143,804	77.1	11,891,167	8,675,883	6,716,119	8,409,175
Chicago River & Indiana	April	20	.....	.....	568,459	50,109	54,091	456	214,017	14,623	333,296	58.6	235,163	199,215	280,449	252,312
	4 mos.	20	.....	.....	2,303,619	181,558	217,054	2,559	857,432	59,075	1,317,678	57.2	985,941	822,934	1,159,350	1,088,077
Chicago, Rock Island & Pacific	April	7,564	8,334,506	1,509,563	10,904,530	1,570,234	2,343,334	257,077	3,929,867	359,548	8,568,524	78.6	2,336,006	1,659,751	1,180,055	1,109,073
	4 mos.	7,564	33,701,664	6,268,025	44,006,419	5,705,972	8,919,631	1,000,617	16,696,651	1,423,716	34,222,989	77.8	9,783,430	6,979,749	5,207,024	5,750,829
Chicago, Rock Island & Gulf	April	516	489,115	63,552	617,789	68,638	55,490	21,763	193,455	18,223	362,178	58.6	255,612	228,768	186,172	89,410
	4 mos.	516	1,945,200	268,754	2,413,071	243,777	231,211	82,049	778,627	77,475	1,425,467	59.1	987,604	888,466	757,347	516,934
Chic., St. Paul, Minn. & Omaha	April	1,746	1,518,893	316,731	2,000,520	264,879	400,128	38,129	853,778	83,076	1,650,999	82.5	349,521	245,822	173,924	113,670
	4 mos.	1,746	6,136,071	1,340,319	8,137,077	1,018,373	1,552,532	153,926	3,861,688	325,424	6,954,596	85.5	1,182,481	747,796	495,529	698,550
Clinchfield Railroad	April	309	594,185	13,078	620,598	69,666	149,013	21,578	117,187	23,158	380,827	61.4	239,771	164,760	204,958	219,844
	4 mos.	309	2,315,743	56,286	2,421,268	243,209	577,904	87,398	489,746	74,944	1,474,070	60.9	947,198	647,106	1,029,406	933,346
Colorado & Southern	April	1,035	791,094	76,753	946,781	152,488	222,900	13,924	338,923	41,757	772,945	81.6	173,836	105,316	82,911	—7,083
	4 mos.	1,035	3,143,897	324,208	3,793,699	450,241	802,390	60,006	1,371,875	170,601	2,872,934	75.7	920,765	634,781	552,988	317,393
Ft. Worth & Denver City	April	696	682,135	109,853	862,927	136,783	158,052	24,600	280,946	43,614	648,766	75.2	214,161	168,885	154,442	178,894
	4 mos.	695	2,900,366	514,763	3,668,226	459,645	602,578	84,407	1,148,001	160,526	2,469,194	67.3	1,199,032	979,273	945,705	891,541
Wichita Valley	April	271	88,967	7,391	102,791	22,260	6,130	.....	38,098	1,602	68,083	66.2	34,708	27,869	7,588	30,287
	4 mos.	271	432,286	34,961	490,614	81,308	34,087	81	158,865	6,787	280,915	57.3	209,699	178,748	96,186	187,187
Columbus & Greenville	April	167	118,055	15,415	141,473	36,438	17,633	2,904	50,028	11,411	118,414	83.7	23,059	21,642	9,998	864
	4 mos.	167	495,367	67,257	596,151	146,401	74,624	14,574	216,739	47,979	500,313	83.9	95,838	84,114	37,664	25,471
Conemaugh & Black Lick	April	23	79,185	.....	159,350	16,624	32,673	964	93,506	3,536	147,303	92.4	12,047	11,047	11,323	—5,188
	4 mos.	23	281,494	.....	606,809	55,667	116,488	1,539	372,363	13,287	559,346	92.2	47,463	43,463	37,689	—32,174
Delaware & Hudson	April	881	2,965,531	220,006	3,418,510	392,712	796,504	53,594	1,230,490	160,906	2,641,604	77.3	776,906	687,706	666,120	642,725
	4 mos.	881	11,103,780	984,167	12,966,299	1,624,849	3,206,553	216,078	4,995,363	648,552	10,716,468	82.6	2,249,831	1,893,174	1,879,284	1,164,463
Delaware, Lackawanna & Western	April	998	5,467,774	864,429	7,225,952	570,374	1,223,630	150,217	2,681,936	174,807	4,843,747	67.0	2,382,205	1,746,128	1,753,723	1,543,086
	4 mos.	998	19,779,632	3,555,556	26,530,270	2,300,848	4,812,901	547,605	10,689,745	720,080	19,237,286	72.5	7,292,984	5,063,629	5,088,823	4,117,729
Denver & Rio Grande Western	April	2,547	1,986,501	228,231	2,428,279	388,180	539,970	64,358	719,188	93,196	1,828,432	75.3	599,847	434,742	519,196	300,555
	4 mos.	2,547	8,530,687	900,173	10,169,302	1,491,523	2,088,429	232,324	3,098,853	358,202	7,373,117	72.5	2,796,185	2,095,920	2,392,297	1,719,367
Denver & Salt Lake	April	232	169,408	21,867	208,513	44,928	65,351	1,349	39,525	12,948	164,058	78.7	44,455	34,455	46,038	130,351
	4 mos.	232	1,090,832	78,023	1,236,281	140,834	290,867	7,946	202,140	47,986	689,730	55.8	546,551	506,532	535,018	416,697
Detroit & Mackinac	April	300	112,473	10,717	133,043	25,569	31,083	2,040	41,398	5,970	97,425	73.2	35,618	25,175	27,405	6,018
	4 mos.	300	368,695	45,522	447,185	74,462	123,840	8,031	164,858	23,523	386,093	86.3	61,092	19,248	30,018	28,749
Detroit & Toledo Shore Line	April	50	409,586	.....	420,380	48,824	32,686	49,582	99,731	25,704	256,547	61.0	163,833	127,936	55,495	68,145
	4 mos.	50	1,916,434	.....	1,951,170	131,276	150,016	72,582	448,956	51,408	854,236	43.8	1,096,934	942,648	531,047	495,653
Detroit Terminal	April	19	.....	.....	252,469	28,776	26,550	1	106,371	4,306	166,004	65.8	86,465	66,688	67,376	54,398
	4 mos.	19	.....	.....	993,449	84,761	89,060	1	430,817	18,065	622,704	62.7	370,745	284,336	289,031	159,603
Detroit, Toledo & Ironton	April	495	1,203,528	2,744	1,241,493	177,315	160,470	12,981	293,477	28,454	669,280	53.9	572,213	513,992	406,900	131,009
	4 mos.	495	5,000,419	12,374	5,116,624	509,026	652,196	50,392	1,195,464	115,873	2,518,535	49.2	2,598,089	2,279,852	1,881,101	387,190
Duluth & Iron Range	April	269	342,758	3,245	396,029	94,039	110,897	1,552	118,612	20,393	345,493	87.2	50,536	15,896	17,238	—209,402
	4 mos.	269	587,869	21,738	701,105	263,766	450,397	6,487	379,088	86,302	1,186,040	169.2	—484,935	—579,445	—578,240	—785,231
Duluth, Missabe & Northern	April	307	831,251	3,898	947,644	135,463	198,128	2,698	223,655	20,314	580,258	61.2	367,386	226,477	222,945	—442,826
	4 mos.	307	1,053,160	16,538	1,221,904	377,091	735,578	12,260	602,282	88,243	1,815,332	148.6	—593,428	—1,030,336	—1,039,006	—1,580,609
Duluth, Winnipeg & Pacific	April	178	176,081	9,280	192,195	56,777	46,854	5,358	68,398	7,676	187,633	97.6	4,562	—5,513	—7,613	7,688
	4 mos.	178	741,286	50,474	820,239	122,435	154,870	19,159	298,700	32,123	637,325	77.7	182,914	141,560	144,110	147,027
Elgin, Joliet & Eastern	April	453	2,101,003	9	2,309,264	209,380	391,598	16,355	743,023	50,806	1,408,950	61.0	900,314	771,276	604,578	401,068
	4 mos.	452	7,950,016	25	8,744,712	718,878	1,521,528	60,825	3,119,707	207,285	5,625,802	64.3	3,118,910	2,620,136	1,828,260	1,699,672
Erie Railroad	April	2,047	7,600,047	774,482	9,226,984	1,109,961	2,167,213	170,248	3,417,655	301,723	7,244,065	78.5	1,982,919	1,569,630	1,501,504	1,308,078
	4 mos.	2,047	29,995,750	3,121,779	36,211,176	3,690,815	8,439,407	688,279	14,132,691	1,198,339	28,396,185	78.4	7,814,991	6,108,288	5,791,461	4,089,847
Chicago & Erie	April	269	1,207,199	38,833	1,367,692	153,399	116,908	27,973	341,495	42,929	685,354	50.1	682,338	625,519	328,037	12,972
	4 mos.	269	4,656,668	158,430	5,221,282	499,960	532,630	114,003	1,467,342	167,858	2,784,057	53.3	2,437,225	2,212,067	1,025,863	210,050
New Jersey & New York	April	45	34,882	94,011	134,689	16,131	29,888	1,540	68,493	3,658	119,709	88.9	14,980	10,863	—22,522	—26,652
	4 mos.	45	105,755	371,491	498,278	58,691	95,037	6,764	281,340	14,363	456,171	91.5	42,107	25,666	—103,638	—119,993
N. Y., Susquehanna & Western	April	131	353,601	41,067	437,066	61,504	49,870	5,235	181,205	12,120	312,677	71.5	124,389	93,294	67,446	53,657
	4 mos.	131	1,370,340	164,922	1,682,384	191,263	209,339	20,643	774,527	46,661	1,248,413	74.2	433,971	309,215	213,621	23,552
Evansville, Indianap. & Terre Haute	April	146	129,948	2,990	139,966	26,546	20,795	2,261	52,813	5,082	107,490	76.8	32,476	29,397	—8,304	9,191
	4 mos.	146	684,889	14,562	725,344	88,623	87,534	7,855	246,410	21,351	451,593	62.3	273,751	253,159	102,820	50,362
Florida East Coast	April	853	872,985	410,042	1,475,328	148,749	187,406	26,306	388,547	48,236	816,017	55.3	659,311	517,873	423,267	322,530
	4 mos.	853	3,333,938	2,543,730	6,715,716	677,666	731,896	130,908	1,612,839	198,326	3,482,962	51.9	3,232,754	2,661,606	2,348,741	1,347,966

Revenues and Expenses of Railways

MONTH OF APRIL AND FOUR MONTHS OF CALENDAR YEAR 1929—CONTINUED

Name of road		Av. mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1928.
Fort Smith & Western	April	249	$88,284	$7,599	$104,068	$22,273	$22,692	$6,060	$36,248	$7,811	$94,617	90.9	$9,451	$4,728	—$7,680	—$16,761
	4 mos.	249	428,030	36,855	495,721	94,814	103,392	24,409	170,546	28,841	419,604	84.6	76,117	57,192	18,825	—16,619
Galveston Wharf	April	13	.....	.....	148,613	40,293	5,206	5,283	32,378	6,540	101,491	68.3	47,122	30,122	30,055	10,004
	4 mos.	13	.....	.....	722,089	166,605	21,726	17,531	129,679	26,689	426,622	59.1	295,467	227,467	227,378	90,302
Georgia R. R.	April	328	411,056	54,370	502,865	55,538	85,840	23,009	193,211	24,643	381,697	75.9	121,168	105,059	112,525	81,404
	4 mos.	328	1,418,185	212,096	1,769,557	188,085	337,732	90,496	747,221	96,958	1,460,707	82.5	308,850	266,313	312,443	267,429
Georgia & Florida	April	444	114,629	7,386	131,709	26,564	20,920	10,676	57,088	8,931	123,477	93.7	8,232	—1,469	4,512	—190
	4 mos.	444	448,416	37,042	522,003	104,918	87,096	39,123	222,081	34,847	478,933	91.7	43,070	4,225	19,349	63,603
Grand Trunk Western	April	345	1,773,153	142,959	2,019,158	307,270	377,363	49,428	661,750	68,261	1,477,233	73.2	541,925	447,771	219,514	270,639
	4 mos.	345	6,637,710	622,761	7,618,319	711,127	1,503,438	174,287	2,574,287	266,000	5,280,120	69.3	2,338,199	1,969,472	1,508,405	1,087,173
Atlantic & St. Lawrence	April	166	122,062	27,979	177,243	79,131	42,248	6,747	103,156	10,499	243,245	137.2	—66,002	—80,662	—133,790	—137,457
	4 mos.	166	550,541	107,454	737,704	167,788	170,980	23,398	404,703	34,739	808,497	109.6	—70,793	—135,476	—353,215	—401,592
Chic., Det. & Canada Gr. Tr. Jct.	April	59	295,514	595	343,154	26,270	15,146	5,052	102,734	3,670	152,872	44.5	190,282	178,643	153,637	159,581
	4 mos.	59	1,194,570	2,669	1,385,173	74,236	64,625	19,287	407,957	15,833	581,898	42.0	803,275	758,874	624,852	521,515
Detroit, Grand Taven & Mil.	April	192	754,247	24,658	833,871	63,702	61,558	15,254	307,974	18,784	467,354	56.0	366,517	354,019	262,342	220,120
	4 mos.	192	2,748,916	102,525	3,059,954	217,592	258,549	56,215	1,183,766	73,652	1,788,707	58.4	1,271,247	1,223,153	777,191	627,783
Great Northern	April	8,404	7,618,561	764,511	9,245,119	1,816,359	1,764,870	269,391	2,831,682	232,610	7,011,643	75.8	2,233,476	1,539,658	1,578,298	771,137
	4 mos.	8,404	26,211,542	3,411,121	34,150,090	4,989,242	6,821,941	1,031,784	12,089,955	863,090	26,133,063	76.5	8,017,027	5,273,931	5,132,466	3,753,819
Green Bay & Western	April	234	144,018	5,036	153,997	34,265	19,677	6,930	66,811	2,949	130,426	84.7	23,571	16,571	17,155	22,715
	4 mos.	234	545,693	26,119	589,774	96,547	91,644	22,628	266,451	11,721	487,968	82.7	101,806	70,758	55,738	95,476
Gulf & Ship Island	April	307	239,569	35,006	307,545	54,005	50,315	5,119	125,478	8,897	247,886	80.6	59,659	27,907	9,934	9,863
	4 mos.	307	867,847	160,503	1,146,192	215,546	193,830	20,957	448,479	32,218	925,975	80.8	220,217	92,596	29,894	134,931
Gulf, Mobile & Northern	April	733	591,893	23,922	643,934	97,777	105,967	31,308	186,234	28,734	450,286	69.93	193,648	149,864	114,018	109,685
	4 mos.	733	2,211,039	100,288	2,419,518	378,110	385,561	126,843	736,005	114,663	1,742,584	72.02	676,934	512,175	384,840	370,731
Hocking Valley	April	348	1,454,481	49,254	1,654,585	230,202	328,896	16,641	447,755	44,098	1,067,566	64.5	587,019	456,691	310,630	194,774
	4 mos.	348	5,711,264	227,268	6,320,718	852,839	1,229,904	64,918	1,779,950	176,469	4,104,048	64.9	2,216,670	1,695,219	1,555,594	729,416
Illinois Central	April	5,034	9,500,231	1,592,355	12,611,855	1,426,119	2,963,571	252,684	4,499,251	376,893	9,606,881	76.2	3,004,974	2,134,349	2,022,471	2,168,476
	4 mos.	5,035	40,012,281	7,434,637	51,576,872	5,517,622	11,509,858	1,054,555	18,723,142	1,461,637	38,663,840	75.0	12,913,032	9,301,783	8,979,531	8,951,052
Yazoo & Mississippi Valley	April	1,705	1,901,031	224,564	2,288,681	353,199	438,303	41,490	583,618	67,700	1,760,755	76.9	527,926	356,721	266,445	84,268
	4 mos.	1,705	6,931,139	980,965	8,485,291	1,409,268	1,609,755	173,228	3,423,819	261,142	6,896,372	81.3	1,388,919	906,805	599,022	485,241
Illinois Central System	April	6,740	11,414,911	1,819,988	14,917,255	1,779,318	3,409,282	294,174	5,361,069	444,740	11,383,391	76.3	3,533,864	2,491,118	2,288,964	2,246,212
	4 mos.	6,740	46,994,077	8,429,154	60,126,377	6,926,890	13,139,410	1,227,783	22,183,134	1,723,366	45,616,769	75.9	14,509,608	10,212,581	9,582,546	9,410,246
Illinois Terminal	April	473	445,045	127,496	599,678	78,903	97,988	17,597	197,583	36,939	429,009	71.53	170,669	149,407	110,337	20,999
	4 mos.	473	1,729,220	556,058	2,383,240	281,109	368,044	79,808	823,314	157,976	1,710,053	71.75	673,187	588,015	428,056	360,304
Kansas City, Mexico & Orient	April	272	158,548	4,857	169,400	87,690	49,788	7,554	56,397	9,625	209,132	123.5	—39,732	—44,318	—14,532	42,827
	4 mos.	272	576,618	18,654	626,697	249,731	157,610	26,097	223,603	52,483	699,469	111.6	—72,772	—101,174	—5,918	169,123
Kansas City, Mex. & Orient of Tex.	April	465	273,617	10,749	296,214	61,414	40,223	7,832	86,587	10,455	203,846	68.8	92,368	85,748	50,311	42,741
	4 mos.	465	1,028,125	47,306	1,134,376	318,455	197,103	31,583	326,155	21,944	883,018	77.8	251,358	215,431	52,078	105,940
Kansas City Southern	April	784	1,238,432	76,731	1,489,220	191,376	247,962	63,768	440,595	87,982	1,029,848	69.2	459,372	341,456	292,949	204,088
	4 mos.	784	5,027,858	320,238	5,961,003	750,121	988,587	242,530	1,840,875	342,281	4,162,583	69.8	1,798,420	1,327,565	1,087,794	1,061,841
Texarkana & Ft. Smith	April	81	248,283	5,937	274,366	20,827	26,992	7,916	58,895	10,965	126,430	46.1	147,936	131,030	103,935	37,960
	4 mos.	81	947,626	25,908	1,047,292	85,926	91,107	28,517	241,751	43,434	496,516	47.4	550,776	474,885	342,227	211,779
Kansas, Oklahoma & Gulf	April	326	269,556	2,192	276,975	32,296	28,682	12,189	64,361	11,627	144,724	52.3	132,251	112,364	90,122	33,395
	4 mos.	326	1,137,213	10,390	1,168,755	149,671	119,490	54,832	270,971	42,526	628,220	53.8	540,535	460,110	370,890	215,792
Lake Superior & Ishpeming	April	160	214,781	1,197	247,216	32,788	26,353	602	57,074	6,533	123,350	49.9	123,866	110,897	107,760	—61,775
	4 mos.	160	423,344	6,716	472,546	103,879	108,102	2,109	163,391	26,246	403,727	85.4	68,819	16,941	—2,897	—176,630
Lake Terminal	April	13	.....	.....	79,382	18,267	17,148	.....	43,378	1,880	80,673	101.6	—1,291	—6,316	—5,619	—18,308
	4 mos.	13	.....	.....	292,354	49,878	65,538	.....	179,013	8,147	302,576	103.5	—10,222	—30,324	—23,975	—57,018
Lehigh & Hudson River	April	96	209,582	1,273	220,220	27,705	31,836	2,752	73,791	9,454	145,538	66.1	74,682	58,674	40,332	71,279
	4 mos.	96	804,936	4,641	846,412	127,466	124,970	10,646	306,335	38,740	608,157	71.9	238,255	183,316	116,461	154,880
Lehigh & New England	April	216	419,075	1,006	427,249	57,727	92,381	5,567	138,911	17,721	312,307	73.1	114,942	98,845	96,572	103,987
	4 mos.	216	1,450,914	4,189	1,477,257	172,826	376,095	28,501	556,750	70,276	1,204,393	81.5	272,864	230,084	234,989	222,052
Lehigh Valley	April	1,361	5,068,226	489,077	6,059,176	501,383	1,274,927	140,662	2,348,288	142,551	4,437,226	73.2	1,621,950	1,288,853	1,150,004	1,163,646
	4 mos.	1,361	18,819,596	2,007,876	22,653,835	1,657,718	5,092,831	548,316	9,459,849	590,549	17,467,408	77.1	5,186,427	3,982,764	3,398,610	1,863,920
Louisiana & Arkansas	April	301	347,174	9,620	366,589	52,346	55,049	12,277	79,575	12,676	212,441	58.0	154,148	129,107	112,537	79,125
	4 mos.	301	1,279,560	39,254	1,349,995	198,903	209,725	48,083	323,546	50,153	832,588	61.7	517,407	392,443	335,526	254,927
Louisiana Ry. & Nav. Co.	April	338	270,679	7,423	291,326	61,536	32,025	14,643	107,142	11,568	221,034	75.9	70,292	49,057	19,459	27,469
	4 mos.	338	1,083,249	32,764	1,170,646	218,901	134,402	52,520	463,927	47,371	908,755	77.6	261,891	177,233	63,651	4,538
Louisiana Ry. & Nav. Co. of Tex.	April	206	84,896	2,243	90,913	23,461	14,910	2,964	42,400	5,382	89,117	98.0	1,796	—2,690	—16,719	—43,341
	4 mos.	206	298,266	10,122	331,471	101,897	54,772	12,340	160,977	22,334	352,320	106.3	—20,849	—39,959	—91,330	—83,253

Revenues and Expenses of Railways

MONTH OF APRIL AND FOUR MONTHS OF CALENDAR YEAR 1929—CONTINUED

Name of road		Av. mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1928.
Louisville & Nashville	April	5,068	$8,727,827	$1,169,780	$10,737,202	$1,900,800	$2,558,319	$232,133	$3,744,914	$411,545	$8,899,240	82.9	$1,837,962	$1,307,908	$1,244,606	$1,375,070
	4 mos.	5,068	34,798,057	5,265,360	43,068,789	7,055,711	9,936,877	966,925	15,343,960	1,487,874	35,005,750	81.3	8,063,039	5,766,944	5,747,696	6,572,389
Louisville, Henderson & St. Louis	April	199	156,027	32,650	204,584	57,147	47,594	6,735	112,016	11,805	236,872	115.8	—32,288	—44,335	—55,550	21,354
	4 mos.	199	784,686	142,275	995,038	180,289	196,443	28,750	433,922	52,765	898,464	90.3	96,574	38,014	6,754	127,684
Maine Central	April	1,122	1,085,433	238,083	1,472,772	226,611	280,763	15,906	572,251	51,018	1,146,536	77.8	326,236	239,846	215,210	110,475
	4 mos.	1,122	4,582,346	963,018	6,103,017	837,658	1,167,249	66,114	2,460,617	208,374	4,739,247	77.7	1,363,770	1,027,765	864,911	900,066
Midland Valley	April	364	272,334	10,580	292,240	54,283	30,344	8,485	72,133	11,499	174,149	59.6	118,091	102,312	85,287	81,581
	4 mos.	364	1,059,987	48,470	1,144,732	182,106	110,269	26,977	303,157	46,347	664,867	58.1	479,865	414,675	330,961	302,107
Minneapolis & St. Louis	April	1,627	939,127	76,572	1,079,082	223,213	234,789	37,450	493,001	44,833	1,033,380	95.8	45,702	—18,736	—66,083	—197,742
	4 mos.	1,627	3,953,843	312,995	4,517,712	572,181	867,414	145,337	2,206,855	197,212	3,986,243	88.2	531,469	280,856	64,305	—77,781
Minneapolis, St. Paul & S. S. Marie	April	4,380	3,312,830	309,539	3,938,456	467,158	749,633	77,701	1,390,414	123,281	2,824,245	71.7	1,114,211	874,999	722,964	345,224
	4 mos.	4,380	11,322,983	1,401,671	13,766,515	1,790,196	2,913,146	301,087	5,747,030	479,150	11,270,785	81.9	2,495,730	1,571,825	1,092,782	1,031,325
Duluth, South Shore & Atlantic	April	573	317,801	50,600	401,404	49,378	72,296	7,061	174,511	12,156	318,024	79.2	83,380	51,380	31,454	—386
	4 mos.	573	1,286,450	226,979	1,615,883	210,925	277,343	28,706	734,879	45,895	1,306,832	80.9	309,051	181,049	107,276	99,084
Spokane International	April	165	71,112	7,426	85,113	16,427	10,122	3,525	30,098	6,733	67,956	79.8	17,157	11,693	6,662	5,800
	4 mos.	165	286,733	35,445	395,353	71,168	37,484	13,988	150,228	25,308	302,387	76.5	92,966	71,110	45,453	36,772
Mississippi Central	April	161	133,406	5,508	143,882	18,918	23 027	9,072	37,601	8,119	96,733	67.2	47,149	36,337	34,993	27,450
	4 mos.	161	505,385	24,301	548,765	73,008	96,270	37,359	147,908	33,015	387,553	70.6	161,212	121,299	120,478	116,697
Missouri & North Arkansas	April	364	142,251	10,226	162,984	38,034	23,997	8,934	54,013	8,850	132,176	81.1	30,808	26,648	14,197	5,849
	4 mos.	364	525,465	40,901	603,124	130,545	92,577	38,141	248,497	33,287	542,552	89.9	60,572	48,917	—1,310	—31,769
Missouri-Kansas-Texas Lines	April	3,188	3,454,217	478,826	4,345,296	634,796	902,495	120,668	1,354,155	171,804	3,195,839	73.5	1,149,457	897,904	692,421	761,942
	4 mos.	3,188	14,095,704	2,121,078	17,679,429	2,178,078	3,607,631	481,422	5,458,348	680,735	12,479,632	70.6	5,199,797	4,123,576	3,299,352	3,310,401
Missouri Pacific	April	7,461	8,925,201	1,003,361	10,825,182	2,008,255	1,986,137	307,070	3,706,299	399,819	8,424,446	77.8	2,400,736	1,930,143	1,392,512	1,276,695
	4 mos.	7,461	35,833,537	4,349,334	43,592,857	6,636,841	8,108,784	1,203,984	15,496,450	1,541,326	33,073,442	75.9	10,519,415	8,607,424	6,585,804	5,970,229
Gulf Coast Lines	April	1,026	1,306,493	123,348	1,537,103	235,434	241,977	46,659	473,547	61,544	1,053,491	68.54	483,612	401,782	264,416	241,913
	4 mos.	1,026	4,864,702	551,023	5,721,013	911,249	945,634	179,387	1,735,663	245,684	3,993,509	69.80	1,727,504	1,505,195	1,080,787	1,006,297
International-Great Northern	April	1,159	275,242	142,018	1,566,841	229,348	236,952	33,674	648,441	69,495	1,209,617	77.20	357,224	315,149	168,475	154,699
	4 mos.	1,159	4,861,878	687,710	6,124,800	990,394	1,044,304	144,570	2,527,352	279,648	4,957,501	80.94	1,167,299	996,456	501,819	428,858
San Antonio, Uvalde & Gulf	April	318	192,296	15,847	223,063	38,885	33,702	7,315	52,821	8,802	140,580	63.0	82,483	78,163	46,983	42,991
	4 mos.	318	636,674	68,415	757,942	155,516	115,476	28,391	179,443	33,973	510,511	67.4	247,431	230,653	115,134	128,340
Texas & Pacific	April	2,015	3,114,493	429,238	3,807,600	568,490	638,805	89,788	1,220,297	123,102	2,643,687	69.4	1,163,913	961,149	688,738	876,085
	4 mos.	2,015	12,441,026	1,797,011	15,207,552	2,293,597	2,613,607	338,049	4,958,034	486,215	10,670,658	70.2	4,536,894	3,726,380	2,628,239	3,058,960
Mobile & Ohio	April	1,159	1,415,069	78,964	1,580,520	216,703	278,307	54,901	541,076	49,943	1,137,225	72.0	443,295	359,606	297,888	169,769
	4 mos.	1,159	5,067,532	327,426	5,714,006	831,289	1,079,131	224,375	2,106,290	192,544	4,424,897	77.4	1,289,109	942,778	734,986	686,399
Monongahela	April	171	526,552	10,211	542,348	80,000	75,000	1,129	144,688	10,738	311,526	57.4	230,822	213,527	115,572	115,489
	4 mos.	171	2,383,142	46,047	2,449,540	320,000	300,000	4,576	638,112	45,609	1,306,972	53.4	1,142,568	1,049,304	644,899	500,324
Monongahela Connecting	April	6	.....	.....	226,151	23,619	29,335	300	93,850	4,129	151,233	66.9	74,918	61,816	56,028	37,419
	4 mos.	6	.....	.....	847,465	81,438	129,403	1,200	369,959	16,294	598,294	70.6	249,171	205,305	183,601	99,622
Montour	April	56	170,555	.....	171,233	27,425	42,991	1,468	38,041	7,144	117,069	68.4	54,164	52,664	64,185	61,188
	4 mos.	56	624,349	.....	625,831	73,758	178,750	5,232	157,921	29,351	441,738	70.6	184,093	178,093	221,242	204,033
Nashville, Chattanooga & St. Louis	April	1,259	1,800,289	245,669	2,229,768	230,777	383,801	71,793	692,833	78,319	1,458,453	65.4	771,315	681,166	681,927	372,420
	4 mos.	1,259	6,078,891	1,071,274	7,889,076	902,137	1,517,688	338,995	2,737,942	326,160	5,851,163	74.2	2,037,913	1,693,519	1,721,083	1,085,831
Nevada Northern	April	165	100,420	6,798	121,019	13,409	7,400	998	18,570	5,236	45,772	37.8	75,247	60,861	59,092	36,453
	4 mos.	165	388,675	27,326	465,007	48,809	25,650	3,870	73,521	20,233	172,859	37.2	292,148	233,376	227,154	98,367
Newburgh & South Shore	April	6	.....	.....	181,905	18,296	29,323	.....	64,054	6,802	118,475	65.1	63,430	45,851	49,553	50,483
	4 mos.	6	.....	.....	592,977	42,947	133,096	.....	256,591	24,723	457,357	77.1	135,620	65,304	91,763	98,190
New Orleans Great Northern	April	276	239,441	15,665	264,186	44,532	40,015	13,006	74,618	11,773	183,944	69.6	80,242	61,812	35,471	23,941
	4 mos.	276	948,012	60,247	1,039,219	165,989	145,777	51,978	309,991	46,525	720,265	69.3	318,954	247,850	147,410	194,246
New Orleans Terminal	April	20	1,326	.....	188,090	20,883	9,318	.....	60,969	1,543	92,713	49.3	95,377	84,370	67,977	51,096
	4 mos.	20	9,129	.....	638,147	69,776	34,060	.....	245,305	6,349	355,490	55.7	282,657	242,715	195,009	124,968
New York Central	April	6,914	20,921,133	7,336,081	32,736,921	4,494,949	7,502,664	446,784	11,048,631	887,122	24,875,865	76.0	7,861,056	5,458,336	5,307,574	4,583,413
	4 mos.	6,914	78,913,214	30,089,425	125,436,204	15,004,778	29,431,545	1,844,831	45,088,734	3,614,880	96,972,672	77.3	28,463,532	19,343,855	18,535,505	16,556,338
Cincinnati Northern	April	244	285,259	2,157	294,687	33,745	72,069	6,184	97,873	9,757	219,628	74.5	75,059	53,325	42,698	55,761
	4 mos.	244	1,187,449	13,083	1,227,409	143,144	278,900	23,458	436,007	39,863	921,373	75.1	306,036	221,295	162,457	181,287
Cleve., Cinn., Chicago & St. Louis	April	2,397	5,502,243	1,069,074	7,272,936	815,417	1,608,919	156,265	2,686,793	240,455	5,582,009	76.8	1,690,927	1,257,581	1,176,701	1,058,665
	4 mos.	2,397	22,631,629	4,577,689	29,635,155	2,828,756	6,623,915	592,161	11,155,055	955,637	22,484,299	75.9	7,150,856	5,353,438	4,958,932	4,260,399
Indiana Harbor Belt	April	117	.....	.....	1,031,033	108,000	112,713	5,716	378,634	25,737	642,441	62.3	388,592	320,081	254,600	224,314
	4 mos.	120	.....	.....	4,124,962	432,000	445,544	20,470	1,746,459	103,996	2,801,898	67.9	1,323,064	1,075,436	899,967	767,138
Michigan Central	April	1,858	6,097,936	1,483,377	8,461,247	844,854	1,728,056	128,215	2,508,011	172,265	5,479,095	64.8	2,982,152	2,384,804	2,190,851	1,755,821
	4 mos.	1,858	23,017,384	6,133,015	32,331,940	2,833,419	6,961,606	521,442	10,313,644	684,697	21,723,854	67.2	10,608,086	8,320,568	7,543,509	6,686,242

Revenues and Expenses of Railways

MONTH OF APRIL AND FOUR MONTHS OF CALENDAR YEAR 1929—CONTINUED

Name of road		Av. mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1928.
Pittsburgh & Lake Erie	April	231	$2,611,412	$176,268	$2,917,449	$317,581	$1,063,829	$32,704	$867,478	$76,209	$2,366,749	81.1	$550,700	$369,598	$716,069	$434,637
	4 mos.	231	9,768,047	745,164	10,978,093	1,278,636	4,059,426	116,504	3,590,039	312,111	9,394,237	85.6	1,583,856	933,298	2,383,210	2,061,934
New York, Chicago & St. Louis	April	1,690	4,268,214	138,614	4,557,680	693,570	909,542	Cr. 59,483	1,542,052	55,281	3,095,051	67.9	1,462,629	1,174,451	1,004,306	706,425
	4 mos.	1,690	17,151,999	517,441	18,259,698	2,075,640	3,466,644	315,314	6,437,643	482,591	12,721,272	69.7	5,538,426	4,481,535	3,665,075	2,522,206
N. Y., New Haven & Hartford	April	2,129	6,522,008	3,768,276	11,629,988	1,618,488	2,043,311	104,634	3,550,326	335,328	7,814,557	67.2	3,815,431	3,175,149	2,586,855	1,968,926
	4 mos.	2,129	23,675,511	14,858,429	43,497,616	5,243,432	7,904,426	396,344	14,197,703	1,351,325	29,768,610	68.4	13,729,006	10,887,793	8,830,991	6,606,930
New York Connecting	April	20	205,452	.....	244,033	20,392	11,213	.....	42,787	1,609	76,001	31.1	168,032	130,032	100,927	75,504
	4 mos.	20	852,124	.....	981,930	261,028	22,408	.....	146,136	6,809	436,381	44.4	545,549	393,549	289,645	373,260
New York, Ontario & Western	April	568	724,631	58,096	938,987	113,698	184,422	19,891	428,754	37,682	787,651	83.9	151,336	106,356	38,866	5,968
	4 mos.	568	2,659,798	221,600	3,447,763	407,799	722,468	76,858	1,748,207	140,129	3,111,669	90.3	336,094	156,065	—44,310	—218,922
Norfolk & Western	April	2,240	8,345,944	400,083	9,016,229	1,369,793	1,810,764	122,075	2,084,927	238,665	5,627,796	62.4	3,388,433	2,587,853	2,832,456	1,765,351
	4 mos.	2,240	33,119,546	1,660,948	35,943,296	4,824,557	7,121,115	467,686	8,842,381	955,754	22,279,181	62.0	13,666,115	10,460,810	11,446,530	7,939,518
Norfolk Southern	April	931	742,523	28,924	819,975	104,695	111,352	24,313	294,544	28,336	561,576	68.5	258,399	206,416	171,788	150,720
	4 mos.	931	2,479,601	117,444	2,784,650	370,143	417,025	104,819	1,076,444	116,265	2,074,171	74.5	710,479	506,006	416,765	572,129
Northern Pacific	April	6,792	6,340,726	665,258	7,779,895	1,578,192	1,536,303	207,843	2,553,936	265,720	6,232,316	80.1	1,547,579	890,090	1,285,433	1,296,842
	4 mos.	6,792	22,619,004	2,952,079	28,364,722	3,720,458	6,107,896	876,978	10,586,466	1,047,903	22,693,194	80.0	5,671,528	3,054,234	4,651,112	5,457,373
Northwestern Pacific	April	477	258,546	123,636	432,399	102,089	111,112	9,674	223,764	17,832	462,699	107.0	—30,300	—68,540	—68,419	—44,489
	4 mos.	477	1,004,824	462,127	1,653,842	383,239	385,128	33,203	896,055	78,199	1,773,673	107.2	—119,831	—272,823	—282,470	—288,149
Pennsylvania R. R.	April	10,473	39,200,675	10,723,701	56,029,625	6,857,964	10,742,589	823,907	18,815,112	1,586,205	39,471,594	70.4	16,558,031	13,506,198	12,231,873	8,445,417
	4 mos.	10,473	149,728,941	42,324,232	212,769,658	25,597,504	43,514,878	3,349,053	75,676,003	6,387,792	157,222,136	73.9	55,547,522	44,901,920	39,917,351	30,143,301
Long Island	April	404	1,004,517	2,030,445	3,230,773	387,774	522,889	18,729	1,264,433	65,974	2,260,399	70.0	970,374	798,912	638,567	583,525
	4 mos.	404	3,617,233	7,651,632	11,937,030	1,542,131	1,965,491	79,203	5,098,650	251,481	8,941,750	74.9	2,995,280	2,559,435	1,993,340	1,199,986
West Jersey & Seashore	April	370	415,582	293,178	749,321	110,997	107,874	4,746	326,484	15,378	568,363	75.9	180,958	100,277	74,342	79,508
	4 mos.	370	1,604,987	1,117,121	2,860,206	421,741	438,117	18,112	1,291,188	58,895	2,232,664	78.1	627,542	526,889	436,677	8,090
Peoria & Pekin Union	April	19	19,151	1,139	140,568	25,857	13,041	5,522	59,916	8,329	112,665	80.1	27,903	10,903	28,245	54,158
	4 mos.	19	87,735	6,703	603,268	64,401	53,484	22,353	265,029	33,435	438,702	72.7	164,566	96,566	157,827	242,519
Pere Marquette	April	2,241	3,542,251	202,117	3,998,243	428,227	809,944	63,640	1,257,395	111,464	2,676,268	66.9	1,321,975	1,038,305	890,886	791,089
	4 mos.	2,241	13,026,634	920,706	14,856,906	1,125,408	3,100,428	255,735	5,096,356	442,186	10,046,479	67.6	4,810,427	3,835,889	3,372,504	2,587,995
Pittsburgh & Shawmut	April	102	110,154	3,897	116,639	20,536	35,509	1,847	36,399	6,807	101,098	86.7	15,541	14,290	16,843	44,680
	4 mos.	102	552,409	17,153	577,758	76,473	136,563	6,929	169,513	30,470	419,948	72.7	157,810	152,492	160,952	210,269
Pittsburgh & West Virginia	April	92	389,681	4,008	425,679	11,009	84,920	17,222	72,468	21,348	217,960	51.2	207,719	154,002	223,063	148,107
	4 mos.	92	1,567,299	17,323	1,717,361	70,164	312,061	68,222	308,493	85,772	888,634	51.7	828,727	610,651	876,433	615,775
Pittsburgh, Shawmut & Northern	April	198	151,482	1,348	156,616	30,228	29,899	1,607	47,178	6,170	115,082	73.5	41,534	38,550	28,498	20,384
	4 mos.	198	597,866	6,530	619,819	102,801	119,086	6,813	198,004	24,020	450,724	72.7	169,095	157,288	125,579	97,692
Quincy, Omaha & Kansas City	April	249	36,464	10,614	53,295	34,298	4,948	730	23,344	4,219	67,466	126.6	—14,171	—19,028	—20,635	—20,896
	4 mos.	249	151,295	41,758	217,088	87,783	32,974	2,880	99,756	11,950	235,102	108.3	—18,014	—37,441	—46,536	—45,127
Reading	April	1,460	7,055,180	570,013	8,335,215	1,237,180	1,825,056	96,974	2,977,552	220,934	6,386,369	76.6	1,948,846	1,622,084	1,608,153	1,526,548
	4 mos.	1,460	27,198,401	2,413,286	31,875,305	4,091,587	7,370,710	360,027	12,010,220	873,048	24,824,720	77.9	7,050,585	5,599,686	5,611,713	4,498,122
Atlantic City	April	163	113,325	94,962	229,403	58,649	26,230	4,221	164,331	5,245	258,974	112.9	—29,571	—69,871	—95,788	—76,226
	4 mos.	163	433,070	342,601	846,168	237,412	110,961	20,319	666,746	22,026	1,057,971	125.0	—211,803	—373,017	—469,599	—543,806
Richmond, Fredericksburg & Potomac	April	117	645,756	342,810	1,210,496	142,819	173,305	10,263	372,687	35,009	764,049	63.1	446,447	375,086	297,649	218,052
	4 mos.	117	2,131,200	1,605,204	4,504,072	438,147	670,832	37,147	1,440,701	143,641	2,837,854	63.0	1,666,218	1,388,891	1,132,480	726,672
Rutland	April	413	340,840	81,564	540,817	80,846	107,859	11,308	202,266	16,148	420,248	77.7	120,569	90,420	100,114	104,315
	4 mos.	413	1,130,458	347,729	1,940,504	325,028	407,709	42,254	796,034	66,359	1,643,957	84.7	296,547	197,819	233,591	288,062
St. Louis-San Francisco	April	5,304	5,264,350	803,021	6,614,593	924,935	1,336,271	135,560	2,202,321	268,758	4,822,063	72.9	1,792,530	1,356,596	1,451,378	1,308,303
	4 mos.	5,304	20,360,993	3,399,709	25,770,473	3,310,634	5,067,010	514,672	8,986,099	958,944	18,703,397	72.58	7,067,076	5,458,166	5,833,986	5,797,398
Ft. Worth & Rio Grande	April	233	69,974	6,899	87,861	29,468	19,051	3,229	43,876	4,809	100,358	114.2	—12,497	—17,388	—27,241	12,905
	4mos.	233	306,968	31,371	380,942	92,094	70,828	13,383	178,738	20,228	374,712	98.4	6,230	—11,496	—46,345	—15,966
St. Louis-San Francisco & Texas	April	154	148,679	11,593	166,387	29,093	24,908	5,288	54,391	6,851	120,511	72.4	45,876	42,571	15,052	36,887
	4 mos.	154	539,119	46,307	609,037	98,925	96,827	21,367	229,930	30,173	476,970	78.3	132,067	119,640	8,656	25,068
St. Louis Southwestern	April	939	1,435,542	52,058	1,558,283	152,424	241,217	69,294	387,839	70,599	931,146	59.8	627,137	575,349	431,403	299,436
	4 mos.	939	5,562,443	230,359	6,068,701	639,489	933,642	287,413	1,582,773	267,790	3,752,577	61.8	2,316,124	2,061,200	1,555,483	1,420,099
St. Louis Southwestern of Texas	April	807	503,171	30,764	597,568	341,119	126,841	29,521	272,907	35,050	815,675	136.5	—218,107	—245,679	—224,148	—89,072
	4 mos.	807	2,032,421	138,964	2,412,959	1,063,043	521,076	114,724	1,179,219	139,488	3,048,189	126.3	—635,230	—748,089	—652,046	—216,361
San Diego & Arizona	April	156	99,610	11,163	115,420	22,054	16,221	4,593	28,009	8,175	80,432	69.7	34,988	29,099	29,149	11,533
	4 mos.	156	369,540	92,991	471,729	81,062	65,836	17,383	123,898	32,119	326,190	69.1	145,539	121,989	120,858	85,586
Seaboard Air Line	April	4,490	4,637,565	500,109	5,640,810	702,318	929,365	209,290	1,892,110	178,473	3,980,175	70.6	1,660,635	1,309,397	1,083,987	1,014,373
	4 mos.	4,490	16,673,493	3,379,479	22,044,409	2,672,384	3,629,348	827,934	7,544,220	707,060	15,748,546	71.4	6,295,863	4,917,252	4,095,140	3,833,450
Southern Ry.	April	6,730	10,001,204	1,719,045	12,710,648	1,752,391	2,156,125	247,230	4,046,725	374,819	8,660,189	68.1	4,050,459	3,274,562	3,108,642	2,379,778
	4 mos.	6,730	36,126,959	7,287,784	47,254,411	7,350,962	8,279,001	986,980	15,911,204	1,474,597	34,280,015	72.5	12,974,396	9,929,667	9,346,240	8,836,048

4 mos.	6,730	36,126,959	7,287,784	47,254,411	7,350,962	8,279,001	986,980	15,911,204	1,474,597	34,280,015	72.5	12,974,396	9,929,667	9,346,240	8,836,048		

Revenues and Expenses of Railways

MONTH OF APRIL AND FOUR MONTHS OF CALENDAR YEAR 1929—CONTINUED

Name of road		Av. mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net ry. operating income.	Net ry. operating income, 1928.
Alabama Great Southern	April	314	$741,387	$117,086	$917,478	$148,447	$170,955	$20,505	$252,824	$24,207	$623,478	68.0	$294,000	$223,566	$234,470	$174,619
	4 mos.	314	2,606,517	509,131	3,379,475	567,711	661,000	86,877	975,697	93,469	2,410,200	71.3	969,275	713,268	801,025	669,532
Cinn., New Orleans & Tex. Pacific	April	338	1,642,165	228,009	1,978,368	334,891	434,332	45,422	550,033	55,906	1,433,526	72.5	544,842	459,675	425,074	367,289
	4 mos.	338	5,777,463	1,108,854	7,294,485	2,316,673	1,606,425	180,448	2,092,539	218,456	6,473,350	88.7	821,135	538,521	433,307	1,504,168
Georgia Southern & Florida	April	397	238,543	91,757	357,506	67,897	80,105	2,942	124,119	3,171	284,812	79.7	72,694	49,445	51,362	5,743
	4 mos.	397	873,268	511,573	1,539,330	327,500	319,358	23,962	589,812	28,931	1,323,114	86.0	216,216	121,868	112,737	63,971
New Orleans & Northeastern	April	204	377,787	58,594	468,951	64,855	82,878	11,152	129,884	15,149	307,802	65.6	161,149	112,653	74,648	54,767
	4 mos.	204	1,427,688	254,299	1,871,086	240,892	322,987	47,416	531,130	58,253	1,215,574	65.0	655,512	462,579	315,372	264,713
Northern Alabama	April	110	103,885	4,727	112,101	25,665	3,353	2,246	27,991	2,752	61,987	55.3	50,114	42,028	30,641	18,280
	4 mos.	110	393,910	23,241	431,557	91,130	13,110	8,919	122,623	11,082	246,941	57.2	184,616	154,060	80,560	5,223
Southern Pacific	April	8,887	13,233,575	3,058,617	18,185,778	2,408,163	3,186,094	434,093	5,795,716	702,798	12,835,155	70.6	5,350,623	3,875,060	3,631,159	2,602,669
	4 mos.	8,887	50,358,618	12,491,043	69,723,575	9,037,274	12,134,129	1,717,909	23,140,125	2,641,635	49,958,908	71.7	19,764,667	14,054,033	12,898,236	11,097,718
So. Pacific Steamship Lines	April	....	769,649	44,729	967,265	20,373	230,917	19,899	571,178	32,626	874,993	90.5	92,272	88,966	93,115	26,462
	4 mos.	....	2,970,883	169,646	3,634,989	77,627	918,170	80,479	2,295,148	132,254	3,503,678	96.4	131,311	123,134	134,035	157,803
Texas & New Orleans	April	4,729	4,973,124	791,255	6,273,482	976,232	1,251,550	168,327	1,987,146	261,575	4,633,770	73.9	1,639,712	1,271,226	955,474	397,902
	4 mos.	4,729	18,876,046	3,460,979	24,203,152	3,701,755	4,913,212	692,833	8,077,265	1,036,072	18,456,860	76.3	5,746,292	4,363,506	3,118,752	1,302,717
Spokane, Portland & Seattle	April	554	588,041	71,458	728,639	120,406	110,020	12,121	223,209	23,949	493,858	67.8	234,781	149,483	138,989	118,643
	4 mos.	554	2,218,528	291,095	2,763,190	358,571	405,276	42,153	866,585	97,679	1,786,042	64.6	977,148	635,783	594,036	506,460
Tennessee Central	April	296	229,629	15,761	262,826	63,032	46,207	9,010	101,379	13,818	233,053	88.7	29,773	23,933	6,197	41,964
	4 mos.	296	900,769	64,936	1,029,267	222,927	178,238	34,251	386,257	51,546	872,553	84.8	156,714	133,799	62,807	137,846
Terminal R. R. Assn. of St. L.	April	55	.....	.....	1,022,775	158,768	84,918	2,802	433,900	28,699	712,349	69.6	310,426	193,409	281,581	312,558
	4 mos.	55	.....	.....	4,204,067	539,292	349,481	11,301	1,929,646	110,615	2,951,752	70.2	1,252,315	851,121	1,198,499	1,398,941
Texas Mexican	April	162	142,082	2,231	161,751	22,102	20,606	3,751	52,421	7,606	105,434	65.1	56,317	51,311	43,944	60,622
	4 mos.	162	394,889	11,653	465,505	77,136	73,069	15,806	180,121	29,963	375,043	80.6	90,462	70,378	43,645	85,289
Toledo, Peoria & Western	April	239	167,257	632	173,114	14,405	26,178	11,113	59,429	9,781	120,906	69.8	52,208	44,921	37,339	3,775
	4 mos.	239	701,374	3,564	726,935	65,532	89,249	44,199	256,464	34,313	489,757	67.4	237,178	206,542	168,143	38,047
Toledo Terminal	April	28	.....	.....	133,994	25,560	18,997	544	56,311	5,251	106,663	79.6	27,331	10,830	27,476	40,920
	4 mos.	28	.....	.....	548,729	33,721	67,790	2,297	233,788	23,341	360,937	65.8	187,792	122,745	222,109	197,019
Trinity & Brazos Valley	April	367	119,520	4,913	133,627	36,288	32,688	5,455	68,302	12,017	154,394	115.5	—20,767	—28,588	—50,244	—23,374
	4 mos.	367	633,324	21,634	685,840	145,906	135,291	21,858	314,679	47,750	659,566	96.2	26,274	—5,021	—109,968	—66,244
Ulster & Delaware	April	128	50,197	3,348	97,881	15,582	15,600	1,319	41,682	3,933	78,116	79.8	19,765	14,665	10,746	—739
	4 mos.	128	115,275	12,754	278,925	51,817	58,426	4,698	150,784	16,660	282,385	101.2	—3,460	—18,860	—26,851	—52,651
Union R. R. of Penna.	April	45	.....	.....	831,849	94,653	189,538	218	348,436	14,181	647,026	77.8	184,823	154,823	183,298	123,060
	4 mos.	45	.....	.....	2,951,895	339,438	683,308	668	1,366,892	55,997	2,446,303	82.9	505,592	385,592	602,730	496,652
Union Pacific	April	3,765	6,580,304	1,121,591	8,508,046	1,260,250	2,003,035	191,923	2,426,803	340,361	6,391,851	75.1	2,116,195	1,391,520	1,264,013	1,315,144
	4 mos.	3,765	27,712,968	4,309,726	35,011,986	3,766,967	7,763,700	675,800	10,176,632	1,341,863	24,321,715	69.5	10,690,271	7,791,385	7,300,339	6,890,210
Oregon Short Line	April	2,539	2,452,338	273,518	2,948,882	659,067	461,786	61,297	832,822	134,828	2,206,562	74.8	742,320	460,495	401,125	216,988
	4 mos.	2,539	10,035,618	1,191,116	12,062,281	1,790,458	1,871,901	213,056	3,528,848	529,326	8,146,043	67.5	3,916,238	2,780,159	2,525,071	1,760,177
Oregon-Wash. R. R. & Nav. Co.	April	2,365	1,766,107	209,183	2,207,712	564,168	363,713	80,085	826,530	132,190	2,004,703	90.8	203,009	1,572	—132,235	—182,164
	4 mos.	2,365	6,981,821	924,071	8,723,139	1,684,076	1,491,019	303,477	3,526,743	529,555	7,633,104	87.5	1,090,035	298,016	—176,510	—301,247
Los Angeles & Salt Lake	April	1,208	1,754,425	337,580	2,298,559	407,692	387,887	84,904	646,652	81,640	1,697,953	73.9	600,606	460,058	361,609	—43,044
	4 mos.	1,208	6,830,899	1,253,488	8,837,188	1,379,401	1,490,266	318,516	2,650,417	331,414	6,509,895	73.7	2,327,293	1,764,049	1,371,662	56,477
St. Joseph & Grand Island	April	258	254,031	10,997	284,773	52,570	40,703	3,238	104,247	16,644	217,402	76.3	67,371	50,748	33,144	58,610
	4 mos.	258	1,115,377	47,854	1,230,968	156,053	165,935	12,619	426,908	63,680	825,195	67.0	405,773	323,094	249,486	299,679
Utah	April	111	141,338	.....	141,406	18,173	32,707	366	33,724	5,698	90,668	64.1	50,738	39,750	34,743	17,093
	4 mos.	111	816,117	.....	816,994	107,320	164,123	1,507	174,762	22,042	469,754	57.5	347,240	287,912	257,320	126,232
Virginian	April	545	1,293,686	23,793	1,400,755	173,170	251,750	13,600	300,283	32,552	769,891	55.0	630,864	480,863	553,424	413,925
	4 mos.	545	5,994,065	123,590	6,426,255	641,924	1,145,959	56,643	1,294,101	129,240	3,261,826	50.8	3,164,429	2,484,423	2,766,787	2,139,151
Wabash	April	2,523	5,077,252	527,278	6,021,322	860,235	1,057,483	169,548	2,247,337	195,592	4,551,807	75.6	1,469,515	1,196,803	810,147	717,072
	4 mos.	2,523	20,594,484	2,179,727	24,365,724	2,831,380	4,180,633	667,867	9,310,363	765,303	17,838,754	73.2	6,526,970	5,380,569	4,027,610	3,117,306
Ann Arbor	April	293	479,979	15,096	511,389	47,479	115,829	15,194	187,018	12,231	377,794	73.9	133,595	105,766	72,764	57,824
	4 mos.	293	1,949,086	66,183	2,076,733	195,047	399,698	56,138	810,777	47,477	1,509,112	72.7	567,621	457,072	343,751	262,207
Western Maryland	April	874	1,361,703	22,227	1,440,134	242,181	306,072	41,414	396,578	44,819	1,030,435	71.6	409,699	329,699	368,947	346,594
	4 mos.	875	5,612,168	98,555	5,934,984	896,839	1,208,102	167,937	1,667,936	171,152	4,117,156	69.4	1,817,828	1,497,828	1,670,350	1,649,200
Western Pacific	April	1,051	1,172,326	100,052	1,366,194	306,884	280,482	76,124	464,203	47,015	1,182,193	86.5	184,001	83,888	148,373	—36,404
	4 mos.	1,051	4,431,162	329,942	5,070,228	903,892	1,044,910	281,280	1,913,118	187,303	4,362,263	86.0	707,965	298,630	542,800	29,998
Wheeling & Lake Erie	April	511	1,683,502	18,157	1,811,137	247,179	426,104	36,036	483,099	44,576	1,238,113	68.4	573,024	436,796	422,083	275,449
	4 mos.	511	6,275,418	88,634	6,726,466	721,610	1,647,059	147,088	1,933,179	184,655	4,638,199	69.0	2,088,267	1,549,516	1,468,074	1,027,311
Wichita Falls & Southern	April	168	58,872	883	65,672	11,619	11,453	2,654	23,828	5,944	55,498	84.51	10,174	4,699	2,137	10,868
	4 mos.	168	291,942	6,011	315,952	49,607	44,264	10,291	100,514	19,755	224,431	71.03	91,521	69,121	56,133	29,836

News of The Week

(*Continued from page 1343*)

and death were caused by negligence of defendant and its employees: in leaving the crossing in a dangerous condition; in failing to sound the whistle to give warning, to keep a lookout ahead as the train approached the crossing; and in operating the train by a "practically blind engineer." The answer denied that defendant or any of its employees was guilty of negligence and alleged that deceased came to his death as the result of his own fault.

Plaintiff proved that her husband was killed in the collision. She also offered some evidence of negligent maintenance and a dangerous condition of the crossing, but offered no evidence to support her other allegations of negligence. Defendant offered much testimony tending to show that it and its employees exercised due care for proper maintenance and operation.

The trial court's charge substantially stated that when it appeared that damage has occurred by reason of the operation of the train, the presumption arises that the company and its employees were negligent in each of the particulars specified in the plaintiff's petition, and unless this charge is disproved, the plaintiff would be entitled to recover. Subject to that qualification the burden was upon the plaintiff in this case to establish her contentions by a preponderance of the evidence.

The construction of Sec. 2780 by the trial court was thus stated by the United States Supreme Court: "Upon the mere fact of collision and resulting death, the statute is held to raise a presumption that defendant and its employees were negligent in each of the particulars alleged; and by authorizing the jury, in the absence of evidence, to find negligence in the operation of the engine and train, the court necessarily permitted the presumption to be considered and weighed as evidence against the testimony of defendant's witnesses tending affirmatively to prove such operation was not negligent in any respect." And the court said, citing several state railroad cases, that this construction is in harmony with that given by the higher courts of the state.

The opinion then continues:

"Legislation declaring that proof of one fact or group of facts shall constitute *prima facie* evidence of an ultimate fact in issue is valid if there is a rational connection between what is proved and what is to be inferred. A *prima facie* presumption casts upon the person against whom it is applied the duty of going forward with the evidence on the particular point to which the presumption relates. A statute creating a presumption that is arbitrary or that operates to deny a fair opportunity to repel it violates the due process clause of the Fourteenth Amendment. Legislative fiat may not take the place of fact in the judicial determination of issues involving life, liberty or property. (Manley v. Georgia—U. S.—and cases cited.)

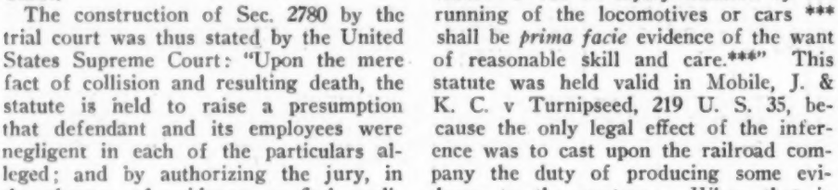
"The mere fact of collision between a railway train and a vehicle at a highway grade crossing furnishes no basis for any inference as to whether the accident was caused by negligence of the railway company or of the traveler on the highway or of both, or without fault of anyone. Reasoning does not lead from the occurrence back to its cause. And the presumption was used to support conflicting allegations of negligence. Plaintiff claimed that the engineer failed to keep a lookout ahead, that he did not stop the train after he saw the truck on the crossing and that his eyesight was so bad that he could not see the truck in time to stop the train.***

"The presumption raised by Sec. 2780 is unreasonable and arbitrary and violates the due process clause of the Fourteenth Amendment."

The court distinguished this statute from the Mississippi statute which provides: "Proof of injury inflicted by the running of the locomotives or cars *** shall be *prima facie* evidence of the want of reasonable skill and care.***" This statute was held valid in Mobile, J. & K. C. v Turnipseed, 219 U. S. 35, because the only legal effect of the inference was to cast upon the railroad company the duty of producing some evidence to the contrary. When that is done, the inference is at an end, and the question of negligence is one for the jury upon all of the evidence. "The Mississippi statute created merely a temporary inference of fact that vanished upon the introduction of opposing evidence. That of Georgia as construed in this case creates an inference that is given effect of evidence to be weighed against opposing testimony and is to prevail unless such testimony is found by the jury to predominate."

The judgment of the state court was reversed. Western & Atlantic v Henderson. Decided May 27, 1929. opinion by Mr. Justice Butler.

* * * *



New Freight House of the Southern Railway at Winston-Salem, N. C.

Traffic

The Wabash has established the "Central States Limited" between Kansas City, Mo., and Detroit, Mich. Eastbound this train leaves Kansas City at 5:45 p.m. and arrives in Detroit at 12:45 p.m. (Central time) the next day. Westbound, it leaves Detroit at 10:30 p.m. (Central time) and arrives in Kansas City at 5:45 p.m.

The Delaware & Hudson has opened an agency at 1228 Terminal Tower building, Cleveland, Ohio, in charge of C. J. Connolly, general agent, freight department. The territory assigned the agency comprises the states of Indiana, Ohio and Kentucky; and the office is headquarters of two traveling freight agents.

The Interstate Commerce Commission has approved the plan of the Northern Pacific and the Minneapolis, St. Paul & Sault Ste., Marie railways for the pooling of ore tonnage moving from the Cayuna range in Minnesota to Superior, Wis., and also coal from Superior and Duluth to mines on the range.

The special emergency reductions in the freight rates on wheat and wheat flour for export, which the railroads agreed to make at the request of the Administration, became effective on May 29, in accordance with tariffs filed with the Interstate Commerce Commission the day before. The reductions in rates on ex-lake grain had been made effective on May 12.

The Southeast Shippers' Advisory Board will hold its next meeting at Macon, Ga., on June 7. A. E. Clift, president of the Central of Georgia, will speak on "Modern Transportation Service" and W. E. Dunwedy, president of the Standard Brick and Tile Company, and A. M. Stephens, traffic manager of the Standard Oil Company, will present a resumé of the growth of their respective industries in the Southeast.

"New England-Historic" is the title of a handsome 24-page folder which has been issued by the passenger department of the Boston & Maine. While describing well-known scenes and events familiar to tourists in Boston, Lexington, Concord, Salem and various places in Maine and New Hampshire, the pamphlet is of special interest by reason of the large number of new photographs with which its pages are illustrated.

The Allegheny Shippers' Regional Advisory Board will hold its tenth regular meeting at Scottish Rite Cathedral, New Castle, Pa., on Thursday, June 13. The executive committee, and others, a total of about 75 members, will meet on Wednesday the 12th, and will be entertained at luncheon by the New Castle Chamber of Commerce. The Secretary of the Allegheny board is Charles Brooks, 2235 Kopper Building, Pittsburgh, Pa.

Western Pacific Shortens Schedules

The Western Pacific, on June 9, will place the Scenic Limited which is operated in conjunction with the Missouri Pacific and the Denver & Rio Grande Western between St. Louis, Mo. and San Francisco, Cal., on a 27-hr. schedule between Salt Lake City and San Francisco a reduction of 1¼ hours. At the same time the schedule of the Pacific Express will be shortened from 33¾ hours to 33¼ hours.

Bill to Reduce Export Grain Rates

A joint resolution H. J. Res. 95, directing the Interstate Commerce Commission "to make certain changes in the rate structure of common carriers by reducing the rate from all interior points to points of exportation on shipments of wheat similar to those now carried on shipments of steel from interior points to ports of exportation", was introduced in the House on June 3 by Representative Howard, of Nebraska. A similar resolution was also introduced by Representative Jones, of Texas.

I.C.C. Rate Order Upheld

The Supreme Court of the United States, in a decision rendered on June 3, affirmed the decision of the district court for the northern district of Illinois which had denied an injunction sought by the Atchison, Topeka & Santa Fe and other roads to restrain the enforcement of an order of the Interstate Commerce Commission directing the cancellation of proposed tariffs increasing freight rates on grain from numerous country points in Colorado, Kansas and Nebraska to Kansas City, Mo., and Wichita, Kan. The Santa Fe tariff imposed a 4-cent addition to its Kansas City rate on grain that should later be reshipped over the line of the Kansas City Southern to the Gulf, "to preclude and prevent movement via such route." The court said the Santa Fe's legal interest in the grain ended when it was delivered at Kansas City and its charges for the haul to Kansas City were fully paid.

Derby Day Traffic Keeps Pace with Last Year

A total of 34 special regular trains carrying over 5,000 people to attend the Kentucky Derby on May 18 were operated by the Pennsylvania, the Chicago, Indianapolis & Louisville, the Cleveland, Cincinnati, Chicago & St. Louis and the Chicago & Eastern Illinois from Chicago to Louisville Ky. on May 16 and 17. A total of 218 cars were moved by the Pennsylvania as compared with 212 last year, the greater number of cars this year being handled in 20 trains. The passengers carried this year totaled 3,541 on the going trip and 3,667 on the return journey, compared with 3,416 and 3,128, respectively, in 1928. Twenty-two trains were run to move the crowds on the return trip.

The Monon operated a total of 12 trains of which eight were special and four were extra sections on regular trains. The Big Four and the Chicago & Eastern Illinois, in conjunction with the Southern, ran one extra train each.

Shriners Use 45 Special Trains

A total of 45 special trains were used to carry shriners from Chicago to the Imperial Council meeting of the Ancient Arabic Order of the Mystic Shrine at Los Angeles, Cal. on June 3 to 6. Five trains came from the east over the Pennsylvania and were moved from Chicago over the Chicago & North Western and the Union Pacific. In addition eight other specials carried people from the vicinity of Chicago over the same route. The total number carried on these 13 special trains and in extra cars on regular trains of this route was 3,000.

The Atchison, Topeka & Santa Fe ran 29 special trains, three extra sections of regular trains and 25 extra cars in regular trains for the accommodation of 5,000 people.

The Chicago, Rock Island & Pacific and the Southern Pacific ran a total of 11 specials, three of which were from Chicago, in addition to extra cars on regular trains. Over 2,000 people were carried by this route.

Rates Through Moffat Tunnel Ordered Reduced

The Public Utilities Commission of Colorado on May 25 ordered the Denver & Salt Lake to cancel freight and passenger rates now in effect between Denver, Colo., and Craig, 232 miles, and to file a new tariff based upon actual mileage in all cases where they are now based upon mileage. The Commission calls upon the railroad to reduce its rates by an amount in proportion to the reduction in mileage (22.84 miles) brought about by the operation of trains through the Moffat tunnel.

The tunnel rental charge, the commission said, should be taken care of out of the line haul rates in the same manner as is the expense of any piece of expensive track. It is held that an operating ratio of 67 per cent for the period from March 1 to September 30, 1928, and other statistics of operation, indicated that the financial results of operation do not justify any rates based on constructive mileage. The new rates were to become effective on July 1.

Survey of Upper Mississippi Project Ordered

A survey to determine the cost of providing a dependable 9-foot channel in the upper Mississippi river between the mouth of the Illinois river and Minneapolis has been ordered by the War Department. Major General Edgar Jadwin, chief of engineers, has approved a recommendation of the Board of Engineers for Rivers and Harbors that such a survey be made, made at its meeting on May 28, following recent hearings at which advocates of the further improvement of the upper river channel protested against a report submitted by the district engineer, Major C. L. Hall, who had recommended, as the result of a preliminary examination, that no survey be made on the ground that the cost would far exceed the benefits to be derived. It was announced on May 29 that the board believes that a reliable estimate of the cost of the proposed improvement is necessary in order to determine whether the savings that will accrue to the general public are sufficiently in excess of those that result from the present 6-foot channel to warrant the extra cost of a 9-foot channel.

East-Side Roads Entitled to Restitution

The Supreme Court of the United States, in a decision rendered on June 3 in the case involving the absorption of charges for the transfer of freight across the river between St. Louis and East St. Louis, held that the statutory three—judge district court for the northern district of Illinois should have ordered restitution to the east-side roads by the west-side roads of the payments made by the east-side roads under an order of the Interstate Commerce Commission which the Supreme Court had earlier held invalid. The commission had ordered the east-side roads to absorb the charges on westbound through traffic moving on combination rates which were the same on St. Louis as on East St. Louis and the Supreme Court had reversed the judgment of the lower court which dismissed the application of the roads for an injunction. Appellants then applied for a decree in conformity with the mandate of the Supreme Court requiring the west-side roads to restore the amounts paid under the commission's order but the lower court denied the application for restitution and reference to a master. The Supreme Court now holds that it was the duty of the lower court to retain jurisdiction of the case and enter the decree applied for, stating that the number of suits and the burden of maintaining them, if each claim were treated as a separate cause of action, would be so enormous that the relegation of the east-side roads to that remedy would be a virtual denial of justice.

St. Louis-East St. Louis Transfer Plan Approved

The proposal of the carriers, other than the Chicago & Alton, serving the St. Louis-East St. Louis terminal district, to employ a single transfer company, the Columbia Terminals Company, for the operation of off-track stations and the haulage between such stations and the on-track stations of the railroads and in interchange of freight between railroads was found by the Interstate Commerce Commission to be not violative of any provision of the Interstate Commerce Act in a report made public on June 5 on the commission's investigation of the transfer situation in that district. The report, by Commissioner Porter, also finds that the proposal of the carriers to reduce the number of off-track stations in St. Louis from 12 to 7 and at East St. Louis from 3 to 2 will not be harmful to the public interest or result in unreasonable and inadequate service and that the

maintenance of a constructive station at the west end of Eads bridge as an aid to the direct receipt and delivery of freight is not unlawful and, as at present operated, does not result in unlawful practices.

The commission found, however, that the allowances proposed for off-track station service "represent nothing more than a vague sort of compromise," and the proceedings will be held open to afford opportunity to the roads to enter into a cost study of the service considered and to prepare new tariffs and contracts in the light of such study, to be presented at a further hearing. Commissioner Eastman wrote a separate opinion concurring in part. Commissioner McManamy wrote a separate dissenting opinion and Commissioner Farrel dissented in part in an opinion in which Commissioner Atchison concurred.

"The Empire Builder" on the Air

Colonel Robert P. Lamont, secretary of commerce, will participate in a coast-to-coast broadcast arranged by the Great Northern to mark the departure of the new train, "The Empire Builder" from Chicago on June 10. With the Chicago Union Station as the key station in a chain broadcast, the departure of the train will be put on the air by the National Broadcasting Company. The program, in addition to a brief statement by Secretary Lamont from Washington, will include talks by T. I. Newman, president of the American Association of Railroad Ticket Agents; C. O. Jenks, operating vice-president of the Great Northern; and Chief Two-Guns White Calf of Glacier National Park; and songs by Reinald Werrenrath.

The equipment of the Empire Builder includes an unusually long observation car, and sleeping cars provided with the latest refinements. Three tones of warm green with scroll ornamentation in old gold are used for the general interior finish of the Pullmans. Drawing rooms and compartments have three lighter tones of green, with old gold trimming. Seats are upholstered in green mohair plush with a rose background, varied slightly in pattern in the drawing rooms and compartments. Sofas have top grain leather upholstery in brown with a French pipe design. The carpets are in shades of green, taupe, black and blue on a rose background.

In the sun parlor observation cars passengers will find conveniences ranging from the sun room to the shower baths. The observation platform is enclosed with high, plate glass windows and becomes a solarium furnished with silk-cushioned wicker chairs.

Next to the sun room is the observation lounge, with a telephone, a combination radio-victrola and other facilities. In the same car are a buffet and soda fountain, a card room, a women's dressing room and a large shower-bath compartment, barber shop, valet and maid service, and men's shower-bath. The interior finish of this car will be in elaborate tone work, with the door frames of hand-carved walnut. The dining cars will have new refinements in lighting and decorations and the kitchens will have electric refrigeration.

Southwest Shippers' Board

The Southwest Shippers' Advisory Board held its sixth annual meeting at Oklahoma City, Okla. on May 23 with an attendance of 629, co-ordinating its program to a considerable extent with that of the Oklahoma Grain Dealers' Association, whose annual convention followed the adjournment of the board meeting. This was probably the most important and the most interesting meeting the Southwest board has ever had due to the close approach of the seasonal grain movement which promises to be of bumper proportions and attended by difficulties in the grain industry of unusual import.

Much interest was manifested as to whether or not the proposed substantial reductions in grain rates would have the effect of reducing present stocks to any appreciable extent before the new crop begins to move. The general judgment appeared to be that a reduction in rates would have little influence on foreign buying of American wheat because of strong competitive factors which could hardly be overcome in this way. Reports at the meeting indicated that present stocks in the Southwest are mostly of mill quality, a grade that is not usually exported.

A heavy increase in farm storage was strongly recommended. No good purpose could be served by loading this grain into cars which could not be disposed of with reasonable promptness.

The commodity committees reported continued prosperity in the Southwest. Prospective loadings of grain and hay for the third quarter of the year were estimated at 5 per cent less and paper and products 10 per cent less than for the same quarter of 1928. Loadings of creosoted products, wholesale drugs, fertilizers, wholesale groceries, hardware, livestock, lumber and forest products, retail lumber and salt and salt products are expected to be about the same as last year. But substantial increases are indicated in the loadings of other commodities, as follows: Cement 5 per cent; clay and products 10 per cent; coal, coke and lignite 3 per cent; cotton 5 per cent; cottonseed and products 5 per cent; cotton mills and products 10 per cent; farm implements and cotton gin machinery 20 per cent; glass and glass products 5 per cent; grain products 20 per cent; iron and steel 10 per cent; perishable products 5 per cent; petroleum and products 3 per cent; rice and products 5 per cent; sand, stone and gravel 10 per cent; sugar, molasses and cane 25 per cent; sulphur 5 per cent; and miscellaneous products 10 per cent.

This being the annual meeting of the board, new officers were elected as follows: General chairman, F. A. Leffingwell, Dallas, Tex.; alternate general chairman, Cecil E. Munn, Enid, Okla.; general secretary, A. J. Stone, Dallas, Tex., and assistant secretary, C. P. Wasson, Dallas, Tex. By unanimous vote the next meeting of the board will be held in New Orleans, La., in September.

Equipment and Supplies

Locomotives

THE BANGOR & AROOSTOOK is inquiring for four 4-8-2 type locomotives.

THE CALUMET & HECLA CONSOLIDATED COPPER COMPANY has ordered one six-wheel switching locomotive from the Baldwin Locomotive Works.

THE NEW YORK CENTRAL is reported to be in the market for 42 electric locomotives of the 0-6-6-0 type. This is in addition to its inquiry for fifty steam locomotives reported in the *Railway Age* of June 1.

Freight Cars

THE BOSTON & MAINE contemplates buying 500 box cars.

THE BUFFALO & SUSQUEHANNA contemplates buying 200 all-steel hopper cars of 55 tons capacity.

THE CANADIAN PACIFIC order for 500 flat cars reported in the *Railway Age* of June 1, was placed with the Canadian Car & Foundry Company.

THE ST. LOUIS-SAN FRANCISCO has ordered from the American Car & Foundry Company underframes and superstructure parts for rebuilding 10 box cars.

THE COLUMBUS & GREENVILLE has ordered 300 box cars from the American Car & Foundry Company. This confirms a report in the *Railway Age* of June 1 that this order had been let.

THE PITTSBURGH STEEL COMPANY has ordered 10 gondola cars from the Warren Tank Car Company. Inquiry for this equipment was reported in the *Railway Age* of May 25.

Passenger Cars

THE READING COMPANY has ordered one passenger rail motor trailer car from the J. G. Brill Company.

THE HARTFORD EASTERN has ordered one combination passenger and baggage gasoline rail motor car from the J. G. Brill Company.

THE SPERRY DEVELOPMENT COMPANY has ordered from the J. G. Brill Company, one special gasoline rail motor car for use in connection with its transverse fissure detector apparatus.

THE CHICAGO & NORTH WESTERN has ordered four additional suburban coaches from the Standard Steel Car Company. A previous order for 24 was reported in the *Railway Age* of May 4.

THE DELAWARE, LACKAWANNA & WESTERN will issue inquiries in the near

future for 141 new all steel coaches and motor equipment and for the reconstruction of 141 of the latest model of the present steel coaches which will be used as trailers.

Iron and Steel

THE SOUTHERN PACIFIC is reported to be inquiring for 40,000 tons of rail.

THE NEW YORK CENTRAL has ordered 300 tons of structural steel for a bridge at Cleveland, Ohio, from the American Bridge Company.

THE DELAWARE, LACKAWANNA & WESTERN will issue inquiries soon for structural steel work for the necessary overhead bridges in connection with its electrification work.

THE PENNSYLVANIA has ordered 500 tons of steel for a bridge at Lemoyne, Pa., from the American Bridge Company. An order for 500 tons for electrification work at Trenton, N. J., has been let to the Phoenix Bridge Company, and an order for 700 tons for sub-station work has been let to the Lehigh Structural Steel Company.

THE NEW YORK CENTRAL has ordered 500 tons of fabricated steel from the Phoenix Bridge Company; this is to be used in connection with work now under way widening Park avenue, New York. An order was given to the McClintic-Marshall Company for 1100 tons of steel for a warehouse in West Sixty-fifth street, New York.

Signaling

THE AUTOMATIC SIGNALS to be installed on the Pennsylvania, as noted in the *Railway Age* of June 1, are to be erected on the line between Ben Davis, Ind., and Harmony, 43 miles; between Brownstown, Ill., and Smithboro, 23 miles; and between Farrington, Ill., and Casey, 28 miles.

THE CHESAPEAKE & OHIO has ordered from the Union Switch & Signal Company an electro-mechanical interlocking for MS cabin, Russell, Ky.; 10 mechanical levers and 14 electric. An order has been given to the General Railway Signal Company for an electric interlocking to be installed at Barboursville, W. Va.; 53 working levers.

Machinery and Tools

THE SOUTHERN PACIFIC has ordered from Manning, Maxwell & Moore, Inc., one Monarch Machine Tool Company 33-in. by 14-ft. bed, 16-spindle speed helical geared head Timkenized heavy duty lathe, motor driven. This machine will be used in the Houston, Tex., shops.

THE CHESAPEAKE & OHIO has ordered 24 electric overhead cranes of 2½-tons capacity from the Hoist & Crane Engineering Company, four 5-ton overhead cranes from the Shepard-Niles Crane & Hoist Corp., and two 5-ton overhead cranes from the Chisholm-Moore Mfg. Co.

Supply Trade

W. W. Bricka, has been appointed general manager of the **Goodell-Pratt Company,** Greenfield, Mass.

C. A. Anderson has been appointed sales manager of the **Ford Chain Block Company,** with headquarters at Philadelphia, Pa.

Ewertz & Dalcher, consulting engineers, have moved their office from 50 Church street to 26 Cortlandt street, New York.

The Wagner Electric Corporation, St. Louis, Mo., has moved its Buffalo, N. Y. service station and branch sales office to 1796 Main street.

J. E. Forsyth, consulting engineer at Chicago, has been elected president of the **Forsyth Draft Gear Corporation** to succeed M. K. Northam, resigned.

The **American Hoist and Derrick Company,** St. Paul, Minn. has moved its Chicago office to 1000 Engineering building, 205 W. Wacker Drive.

The Hopkins Company, Marquette building, Chicago, has been appointed representative for the central territory, of the **Track Specialties Company,** New York.

The Bucyrus-Erie Company, South Milwaukee, Wis., will construct an extension, 85 ft. by 100 ft., to its machine and erecting shop to cost $65,000 and a locomotive house, 61 ft. x 140 ft. to cost $27,000.

The Central Iron & Steel Company, Harrisburg, Pa., has moved its New York district office from the Evening Post building to the Cunard building, 25 Broadway, and the Pittsburgh district office has been moved from the Commonwealth building to the Oliver building.

Eugene Brandeis, secretary and treasurer of the **Lundie Engineering Corporation,** with headquarters in New York City, has been appointed vice-president, with the same headquarters. Mr. Brandeis, who has been with the Lundie Engineering Corporation since its formation, was prior to that time, for a number of years connected with the Pennsylvania Railroad in its maintenance of way department at Philadelphia, Pa.

The American Brown Boveri Electric Corporation, Camden, N. J., has organized a subsidiary company to be known as the **American Brown Boveri Company, Inc.,** to handle all the electrical and mechanical operations exclusive of shipbuilding. The new company is licensed under the designs, patents and processes of Brown Boveri & Company, Ltd., Switzerland, and it owns the entire capital stock of the **Condit Electrical Manufacturing Corporation** which will continue to manufacture and sell its products through its own organization. The officers of the new company are: **George A. Burnham,** president; **Maurice L. Sindeband,** vice-president; **Joseph T. Graham,** secretary and treasurer. **William S. Edsall** is general sales manager.

John S. Lemley, former vice-president of the Viloco Railway Equipment Company, Viloco Machine Company and the Okadee Company, has sold his holdings in these companies and is now associated with the **Chas. R. Long, Jr., Company** as vice-president, with headquarters at Louisville, Ky. The office formerly occupied by the Viloco Railway Equipment Company, the Okadee Company and the Chas. R. Long, Jr. Company at St. Louis, Mo., has been closed.

Edward L. Ryerson, Jr., vice-president and general manager of **Joseph T. Ryerson & Sons, Inc.,** Chicago, has been elected president to succeed **Joseph T. Ryerson** who remains a member of the board and continues to hold the office of treasurer. Edward L. Ryerson, Jr. was born in Chicago on December 3, 1886 and graduated from Sheffield Scientific School (Yale) in 1908, later attending Massachusetts Institute of Technology. In 1909 he entered the employ of the Ryerson company working in the plant operating department and holding the position of works manager for several years prior to the war. He entered military service early in the war with the Aircraft Production Board in Washington and was later captain in the Air Service division of the Signal Corps. At the close of the war he re-entered the employ of the Ryerson company and in 1922 was elected vice-president. In 1928 he was elected vice-president and general manager, which position he has held until his recent election. Mr. Ryerson is a member of the board of trustees of the University of Chicago and a director of the Northern Trust Company and the Quaker Oats Company.



Edward L. Ryerson, Jr.

Construction

Construction Field Active During Month of May

The month of May showed an unusual amount of construction activity by the railways throughout the country with work involving a total of more than $43,000,000 let to contractors and new construction, estimated to cost approximately $6,000,000 authorized. Calls for bids during the month involved pending contracts on which expenditures totaling nearly $2,000,000 are contemplated. These figures include only those projects reported in the *Railway Age*.

The largest contract awarded during the month was that of the Hocking Valley for construction work in connection with its terminal, slips and docking facilities at Toledo, O., at a total cost estimated at $1,750,000.

Among the large projects authorized during the period were those of the Texas & Pacific for a new $8,000,000 terminal; the Chicago, Rock Island & Pacific, for a new 71 mile extension south from Coburn, Mo., to cost about $11,500,000; four railways in Chicago, planning the joint elimination of grade crossings at a cost of about $5,000,000; the Owensboro-Rockport Bridge Company for the construction of a new line from Owensboro, Ky., to Rockport, Ind., at an expenditure of about $5,203,300, including a bridge over the Ohio river; the Fort Worth & Denver City for the construction of a new line in Texas to cost about $4,000,000; and the Nashville, Chattanooga & St. Louis, for the construction of a new passenger terminal at Atlanta, Ga., to cost about $3,000,000.

Among the projects announced during the month and for which bids have been invited or in the near future are those of the Cook County (Ill.,) Commissioners for bids on the construction of a bridge and viaduct, 3,500 ft. in length, over the Calumet river at Chicago, and a number of tracks in Chicago, the entire project to cost about $800,000; and the Kentucky & Indiana Terminal for the elimination of grade crossings by elevation of its tracks in Louisville, Ky., at an estimated cost of $1,000,000.

DETROIT & TOLEDO SHORE LINE.—A contract has been let to H. W. McKenzie, Detroit, Mich., for the construction of a grade separation structure over Southfield road at Ecorse, a suburb of Detroit, at a cost of about $190,000.

ERIE.—A contract has been awarded by this company to F. H. Clement & Co., New York, for the construction of a new underpass to eliminate a grade crossing in Corning, N. Y. The project will cost approximately $61,500.

ERIE.—This company will receive bids until June 17 for work including the construction of new tracks and revamping of its terminal car repair shops at Susquehanna, Pa.

GULF & WEST TEXAS.—This company has applied to the Interstate Commerce Commission for a certificate authorizing the construction of a line from Fredericksburg, Gillespie county, Tex., to Brady and thence to Eden and San Angelo, 113 miles, or as an alternative route, from Wetmore, Bexar county, to Fredericksburg and thence to Brady and Eaton, 170 miles. R. W. Morrison, San Antonio, Tex., is president.

MISSOURI-KANSAS-TEXAS. — The Oklahoma State Highway department has prepared preliminary plans for the construction of a one-span 60-ft. highway subway under the tracks of this company in Craig county, Okla., which will require an estimated expenditure of $25,000.

MISSOURI SOUTHERN.—A contract for the construction of the extension of this railroad in Reynolds and Shannon counties, Mo., has been let to the O'Dell Construction Company, Hannibal, Mo.

NEW YORK CENTRAL.—This company has awarded contracts for construction work as follows: To the McClintic-Marshall Company, New York, for the manufacture, delivery and erection of structural steel for its warehouse on West End avenue between Sixty-fifth and Sixty-sixth streets; to the Walsh Construction Company, Davenport, Ia., for grading, tunnel substructure and track work for third and fourth tracking on its lines from Chelsea to Poughkeepsie, N. Y.; to the P. T. Cox Contracting Company, Inc., New York, for work in connection with covering the openings and strengthening the roof over its tracks along Park avenue between Seventy-second and Eighty-sixth streets, New York.

PENNSYLVANIA — PITTSBURGH, SHAWMUT & NORTHERN.—These roads plan the reconstruction jointly of the East State street bridge over their tracks at Olean, N. Y. The approved plans call for a 78½ ft. bridge over the tracks, consisting of four spans, one over the tracks, another the west approach, another for a future track to adjoining property and a fourth on the east approach. It will consist of a 40 ft. roadway surfaced with brick, with two 10 ft. walks on either side. The cost, which has been estimated at about $40,000, will be divided between the two railroads and the town of Olean, the latter building the east approach to the bridge.

PENNSYLVANIA. — This company has awarded contracts as follows: To J. Rich Steers, Inc., New York, for the completion of the concrete deck slabs on the girders of the Pennsylvania-Lehigh Valley bridge over Newark bay at Greenville, N. J., at an expenditure of $110,000; to the John F. Casey Company, Pittsburgh, Pa., for drainage improvements at various points on the Pittsburgh Division, to cost about $110,000; to J. G. Kenan Company, Cleveland, O., for drainage improvements at various points on the Cleveland division; to Austin Givens, Pittsburgh, Pa., for work to cost about $80,000 in connection with the new terminal improvement in Pittsburgh, and to the Marshall Brothers Company, Pittsburgh, for the installation of electric freight elevators in a new station at Sewickley, Pa.

PRINCE GEORGE & CHESTERFIELD.—A contract for the construction of this line, a subsidiary of the Seaboard Air Line, has been awarded to the MacDougald Construction Company, Atlanta, Ga. The new line will connect with the Seaboard at Bellwood, Va., and will extend to Hopewell, Va., a distance of 16½ miles. In addition to the main line of the road, the contract calls for the laying of approximately four miles of yard and side tracks and the building of a steel drawbridge over the Appomattox river. The main track will be laid with 100 lb. rail. A total of about $1,000,000 is expected to be spent on the project, work on which will be started at once.

READING.—This company has awarded two contracts in connection with the track elevation and improvements of its facilities at Manayunk, Philadelphia, Pa., to the O'Neill Construction Company, Chestnut Hill, Pa. The first provides for a passenger station to be located between Gay and Carson streets, Manayunk, on the elevated track level, with driveway approaches at Gay and Cresson streets and at Baker and Carson streets. The northbound station will consist of a waiting room, ticket office, baggage room, womens' waiting room and toilets. The waiting room on the southbound side will be 15 ft. by 48 ft. The buildings will be constructed of brick with terra cotta decoration and slate roof. There will be stairway entrances to both structures at Cresson street. A 515 ft. platform will be provided with enclosed entrance stairs at Gay street and Levering street, and with a glass enclosed shelter at the rear of the platform. The second contract involves the construction of a freight yard extending from north of the Philadelphia Electric substation, at Green lane, to Leverington avenue along Main street, with a coal yard at Leverington avenue. The freight house will be 30 ft. by 92½ ft. and will be constructed of brick with entrance to the yard and freight house from Green lane. There will be three tracks at the freight station and additional carload delivery tracks in the east and west yards. In addition auto truck, scale and crane facilities are also to be provided.

SEABOARD AIR LINE.—This company is building an extension from Connor's packing house, near Bartow, Fla., a quarter of a mile northward toward Excelsior park. The extension will include the building of a new bridge over upper Peace creek and has been estimated to cost $50,000. Its purpose is to open an outlet for additional phosphate mining operations.

ST. LOUIS SOUTHWESTERN.—A contract has been let to Winston Brothers, St. Paul, Minn., for the construction of an

extension between Hornersville, Mo., and Leachville, Ark., 11 miles.

SOUTHERN.—A contract has been awarded to Walter T. Weaver, Birmingham, Ala., for the construction of a retaining wall along the tracks of the Alabama Great Southern at Birmingham, at an estimated cost of $100,000.

UNION PACIFIC.—Company forces will be employed in the construction of a temporary frame passenger station and an express building at Omaha, Neb., which will serve until the completion of the new union station at that point. The structures, which will have outside dimensions of 50 ft. by 216 ft., and 50 ft. by 120 ft., will involve an expenditure of about $40,000.

WABASH.—A contract for grading in connection with the construction of an extension to the yards at Decatur, Ill., has been let to the Walsh Construction Company, Davenport, Iowa. The improvement involves the construction of 11 tracks, each 4,800 ft. long, and the excavation of 175,000 cu. yd. of earth.

WESTERN PACIFIC.—A contract for about 100,000 cu. yd. of grading in connection with the construction of passing tracks at Pulga, Cal., and Belden, has been let to W. A. Bechtel, San Francisco, Cal. Track will be laid by company forces, the total cost of the two passing tracks being estimated at $192,900.

THE SECOND OF THE ARMY'S LARGEST RAILWAY GUNS and mounts is being started on a trans-continental journey. It is the latest 14-inch gun, weighing, with railway mount, 730,000 pounds. The rifle was built at Watervliet Arsenal, New York, and the mount at Watertown Arsenal, Massachusetts. It is now at Aberdeen Proving Ground, Maryland.

The gun will be emplaced at the Presidio, San Francisco, and together with a similar gun, which was transported to Fort MacArthur, near San Diego, several years ago, will form an important part of the coast defenses of the Pacific Coast. It goes to Chicago over the Pennsylvania and from Chicago over the Chicago & North Western to Council Bluffs; by the Union Pacific from Council Bluffs to Ogden and the Southern Pacific from Ogden to destination.

* * *



On the New Haven at Boston

Railway Finance

ATCHISON, TOPEKA & SANTA FE.—*West Dallas Construction.* — The Interstate Commerce Commission has authorized the Gulf, Colorado & Santa Fe, a subsidiary of this company, to construct a new line from Hale, Tex., near Dallas, to the industrial district known as West Dallas, 7 miles, without condition as to the routing of traffic. A previous order authorizing this extension restricted it to the handling of traffic to such points as would result in increased efficiency and economy as compared with existing routes served by another carrier.

BALTIMORE & OHIO.—*Stock Issue.*—The Interstate Commerce Commission has authorized the issue of $41,107,700 of common stock subject to certain conditions.

CENTRAL OF NEW JERSEY.—*Valuation.*—The Interstate Commerce Commission has issued its final valuation report as of June 30, 1918, finding a final value for rate-making purposes of the properties used for common-carrier purposes by this company and subsidiaries of $132,586,089. The final value for the property wholly owned and used by the Central of New Jersey was placed at $104,400,000. The investment in road and equipment, including land, on date of valuation, was $106,014,267 for the Central of New Jersey, whereas the report states that if readjustments were made this would be increased to $113,412,346.

CENTRAL VERMONT.—*Sale.*—Notice was served upon the Central Vermont on June 3 by Charles D. Watson, special master appointed by the United States District Court to conduct such sale, that the property of the company will be sold at public auction at the main entrance of the passenger station at St. Albans at 11 o'clock Monday morning, July 29.

The notice recites a final decree of foreclosure which was made on May 13, and which provides that the Company must pay on or before May 23, 1929, enough money to retire the mortgage bonds and accrued interest, or the property will be sold. The failure of the company to make that payment has resulted in the notice of sale as provided by the decree of foreclosure. The Central Vermont has been in receivership with George A. Gaston of New York, and J. W. Redmond of Newport, as receivers since December 12, 1927, following the disastrous Vermont flood which did damage estimated at more than $2,600,000 to the property.

Authority to form a new Vermont company has been obtained from the Vermont legislature. The stocks and bonds of this new company, the Legislature agreed, may be owned by the Canadian National and the same relations as existed between the company now in receivership and the Canadian National may be maintained, under provisions of the legislation, by the new company which will be formed under the general laws of the state.

CHICAGO & EASTERN ILLINOIS.—*Annual Report.*—The annual report of this company for the year 1928 shows net income after interest and other charges of $400,208, as compared with net income of $438,409 in 1927. Selected items from the income statement follow:

CHICAGO & EASTERN ILLINOIS	1928	1927	Increase or Decrease
Average mileage operated	945.13	945.13	.....
RAILWAY OPERATING REVENUES	24,893,573	26,714,327	—1,820,753
Maintenance of way	2,880,886	3,192,223	311,337
Maintenance of equipment	4,996,568	5,972,979	—976,410
Transportation	9,567,084	10,430,582	—863,498
TOTAL OPERATING EXPENSES	19,420,758	21,529,900	—2,109,142
Operating ratio	78.02	80.59	—2.57
NET REVENUE FROM OPERATIONS	5,472,815	5,184,426	288,389
Railway tax accruals	1,583,000	1,400,000	183,000
Railway operating income	3,882,054	3,776,664	105,390
Equipment rents—Net Dr.	1,057,528	963,688	93,840
Joint facility rents—Net Dr.	623,851	521,267	102,584
NET RAILWAY OPERATING INCOME	2,200,674	2,291,709	—91,035
Non-operating income	554,735	502,380	52,355
GROSS INCOME	2,755,409	2,794,088	—38,680
Rent for leased roads	160,543	153,604	6,939
Interest on funded debt	2,124,455	2,148,500	—24,045
TOTAL DEDUCTIONS FROM GROSS INCOME	2,355,200	2,355,679	—479
NET INCOME	400,208	438,409	—38,201

CHICAGO, ROCK ISLAND & PACIFIC.—*Acquisition.*—This company has applied to the Interstate Commerce Commission for authority for the acquisition and control by it of the Beaver, Meade & Englewood by purchase of its outstanding stocks and bonds for a consideration of $1,301,966.

DENVER & SALT LAKE.—*Annual Report.*—The annual report of this company for 1928 shows net income after interest and other charges of $391,773, as compared with net income of $131,875 in 1927. Selected items from the income statement follow:

DENVER & SALT LAKE	1928	1927	Increase or Decrease
Average mileage operated	235.87	255.18	— 19.31
RAILWAY OPERATING REVENUES	4,011,663	4,110,286	— 98,623
Maintenance of way	824,448	1,108,933	—284,485
Maintenance of equipment	902,749	1,217,467	—314,718
Transportation	687,738	919,422	—231,684
TOTAL OPERATING EXPENSES	2,536,322	3,375,502	—839,180
NET REVENUE FROM OPERATIONS	1,475,341	734,784	740,557
Railway tax accruals	131,570	87,730	43,840
Hire of equipment—Net	84,770	33,858	50,911

Net Railway Operating Income	1,428,412	679,907	748,505
Gross Income	1,554,489	768,649	785,840
Total Deductions from Gross Income	1,162,716	636,774	525,942
Net Income	391,773	131,875	259,897

Detroit, Toledo & Ironton.—*Operation and Securities.*—The Interstate Commerce Commission has authorized this company to operate over the lines of the Detroit & Ironton. Authority has been granted to the latter company to issue $500,000 of capital stock and $3,850,000 of first mortgage 5 per cent bonds, series B, in connection with the acquisition of the railroad properties of the Ford Transportation Company. Operation by the D. T. & I. of the properties of the D. & I. under an operating license has been found not to involve acquisition of control within the meaning of Paragraph (2) of Section 5 of the Interstate Commerce Act and the application so to operate has been dismissed.

McCloud River.—*Acquisition and Operation.*—The Interstate Commerce Commission has authorized this company to extend its line by acquiring the operation of a railroad owned by the McCloud River Lumber Company extending from Car A to Hambone, Siskiyou County, Cal., approximately 6.9 miles.

Minneapolis & St. Louis.—*Annual Report.*—The annual report of this company for 1928 shows net income after interest and other charges of $1,720,408, as compared with net income in 1927 of $2,064,193. Selected items from the income statement follow:

Minneapolis & St. Louis	1928	1927	Increase or Decrease
Average mileage operated	1,627.80	1,627.80	.....
Railway Operating Revenues	14,450,531	14,413,217	37,314
Maintenance of way	2,108,293	2,226,011	—117,719
Maintenance of equipment	2,816,750	3,144,562	—327,812
Transportation	6,503,966	6,510,114	—6,148
Total Operating Expenses	12,381,983	12,842,315	—460,333
Operating ratio	85.69	89.10	—3.41
Net Revenue from Operations	2,068,548	1,570,901	497,647
Railway tax accruals	789,788	709,545	80,243
Railway operating income	1,274,927	858,168	416,758
Hire of equipment—Net	643,180	550,234	92,946
Joint facility rents—Net	109,470	123,241	—13,771
Net Railway Operating Income	522,277	184,694	337,583
Non-operating income	136,663	134,625	2,038
Gross Income	658,939	319,319	339,621
Interest on funded debt	2,005,738	2,016,453	—10,715
Total Deductions from Gross Income	2,379,348	2,383,512	—4,164
Net Income	1,720,408	2,064,193	—343,785

Mississippi River Western.—*Authority to Operate.*—The Interstate Commerce Commission has authorized this company to operate a line from Stoffles Landing, Ark., westward to Wilson, 2.2 miles.

Seaboard Air Line.—*Common Stock.*—The directors of this company have called a special meeting, combined with the annual meeting, of the stockholders for July 10 at Petersburg, Va., and another for July 11 at Raleigh, N. C., to act upon the following: The election of a board of directors; to consider a proposal for amending the company's charter to provide for the exchange of existing $100-par common stock for no-par stock; to consider a proposal for exchanging the no-par stock for other securities of the company. The proposal is to exchange 400,410 shares of no-par stock for an equivalent number of shares of $100-par common stock now outstanding, to change $326,790 shares of authorized but unissued $100 par common stock to an equivalent number of no-par shares, to increase the authorized shares of common stock from 727,200 to 3,227,200, no-par, and to withdraw the conversion privilege with reference to the 4 per cent preferred stock. Under the proposal the authorized stock of the company would total 3,500,000 shares, consisting of 22,800 shares of $100 six per cent preferred, 250,000 shares of $100 four per cent preferred and 3,227,200 shares of no-par common.

Southern Pacific.—*Equipment Trust Certificates.*—This company has applied to the Interstate Commerce Commission for authority for an issue of $6,825,000 of 4½ per cent equipment trust certificates, to be sold at 95.41 to Estabrook & Co., Edward Lowber Stokes & Co., and the Old Colony Trust Company, the highest bidders.

Average Prices of Stocks and of Bonds

	June 4	Last week	Last year
Average price of 20 representative railway stocks.	136.61	130.41	123.51
Average price of 20 representative railway bonds..	90.26	90.36	94.64

Dividends Declared

Atchison, Topeka & Santa Fe.—Preferred, $2.50, semi-annually, payable August 1 to holders of record June 28.

Buffalo & Susquehanna.—Preferred, 2 per cent, semi-annually, payable June 29 to holders of record June 15.

Chesapeake & Ohio.—Common, 2½ per cent, quarterly, payable July 1 to holders of record June 8.

Erie & Pittsburgh.—$.87½, payable June 10 to holders of record May 31.

Hocking Valley.—2½ per cent, quarterly, payable June 29 to holders of record June 8.

Illinois Central, Leased Lines.—2 per cent, payable July 1 to holders of record June 12 to July 4.

Missouri Pacific.—Preferred, 1¾ per cent, quarterly, payable July 1 to holders of record June 7.

Pere Marquette.—Common, 1½ per cent, quarterly, payable June 29 to holders of record June 8; Preferred, 1¾ per cent, quarterly, payable August 1 to holders of record July 15; Prior Preference, 1¾ per cent, quarterly, payable August 1 to holders of record July 15.

St. Louis Southwestern.—Preferred, 1¾ per cent. quarterly, payable June 29 to holders of record June 12.

Railway Officers

Alfred Elected Operating Vice-President

In the re-arrangement of executive officers on the Van Sweringen lines, Frank H. Alfred, president and general manager of the Pere Marquette, has been elected operating vice-president, with headquarters, as hitherto, at Detroit, Mich. This appointment was made in accordance with the policy of having the Pere Marquette, the Hocking Valley, and the Chesapeake & Ohio under one executive head, as indicated by the recent election of J. J. Bernet as president of the three lines.



Frank H. Alfred

During his tenure as head of the Pere Marquette, Mr. Alfred remained in close touch with the operation of the railway, feeling that the chief executive of a railway the size of the Pere Marquette should maintain the contact with the details and with the employees that the general managership requires. The contact with the employees was a particular reason for retaining the duties of general manager, since it was through the development of loyalty and co-operation of the employees that much of the success of the Pere Marquette in recent years was attained.

While Mr. Alfred was president, the Pere Marquette improved rapidly, both from an operating and a financial standpoint. In 1917, for example, gross railway operating revenues amounted to $23,507,855, as compared with $45,761,568 in 1928, while the net railway operating income was $3,561,418 in 1917 and $10,596,357 in 1928, an increase of nearly 300 per cent.

Mr. Alfred was born at Logan, Ohio, on December 24, 1866, and was educated at the University of Michigan and at Ohio State University. His early railroad training was in the construction field. From 1887 until 1889, he served in this branch on the Columbus, Lima & Milwaukee and the Scioto Valley. When the Norfolk & Western acquired the latter line in 1889, as an entrance into Columbus, Ohio, where extensive terminals were to be built, Mr. Alfred, although only 23 years old, was ap-

pointed assistant engineer in charge of this construction, where he remained for five years.

From 1894 to 1900, Mr. Alfred rounded out his practical engineering education by service on a number of roads, including the Columbus, Hocking Valley & Toledo, the Denver & Rio Grande, the Cleveland, Akron & Columbus, and the Wheeling & Lake Erie. While engaged in valuation work for the state of Michigan, early in 1901, Mr. Alfred spent considerable time on the Pere Marquette. The resulting contacts led to his appointment, in 1900, as assistant engineer. On October 1, 1902, he was promoted to chief engineer, in which position he remained for three years. In 1905, he was made manager of the Canadian White Company, which held contracts for extension railway construction work in the Canadian Northwest.

In 1908, Mr. Alfred returned to the United States as assistant to the president of the Cincinnati, Hamilton & Dayton. His first experience in the operating department was as general superintendent of this line, to which position he was appointed in 1910.

He began his second term of service with the Pere Marquette in April, 1912, as assistant general manager. Promotion to general manager for the receivers followed, in December of the same year. When the P. M. was reorganized, on April 1, 1917, Mr. Alfred was elected president and general manager, which position he held until his recent election to the post of operating vice-president.

Executive

H. L. Traber, general freight agent of the Missouri Pacific, has been promoted to executive general agent, with headquarters as before at Kansas City, Mo.

C. A. Blood, traffic manager of the Lehigh Valley, with headquarters at New York, has been appointed assistant vice-president, traffic department, with the same headquarters.

J. M. Condon, general manager of the New York district of the Erie, with headquarters at Jersey City, N. J., has been appointed assistant vice-president with headquarters at New York.

J. F. Hennessey, Jr., general freight agent of the Missouri-Kansas-Texas in charge of solicitation, with headquarters at St. Louis, Mo., has been promoted to executive general agent at Houston, Tex., representing all departments of the railroad.

L. C. Guernsey, assistant purchasing agent of the Illinois Central, has been promoted to assistant to the vice-president in charge of purchases, a newly created position, with headquarters as before at Chicago. **Leonard L. King,** special assistant to the purchasing agent, with headquarters at Chicago, has been promoted to assistant purchasing agent, to succeed Mr. Guernsey. **P. C. Mayer,** office manager of the purchasing department at Chicago, has been promoted to special assistant to the purchasing agent, succeeding Mr. King.

Mortimer Silverman, assistant to the president of the Boston & Maine, with headquarters at Boston, Mass., has resigned to become chief engineer and assistant to the president of the United Merchants' & Manufacturers' Corporation. Mr. Silverman was graduated from Massachusetts Institute of Technology in 1900, after which he was engaged in engineering in industrial and traction fields. He started work under Homer Loring, former chairman of the Boston & Maine, in 1911, developing properties in the Middle West. During Mr. Loring's rehabilitation of the Eastern Massachusetts Street Railway, Mr. Silverman acted as consulting engineer and later when Mr. Loring reorganized the State's finances, Mr. Silverman was engineer for the Commission on Administration and Finance. He entered the service of the Boston & Maine in 1924 as assistant to the chairman and has been with that road since that time.

Oscar Townsend, traffic manager of the Chicago Great Western, has been elected vice-president in charge of traffic, with headquarters as before at Chicago. He was born at Cleveland, Ohio, on April 15, 1874, and was graduated from the University of Cleveland. Mr. Townsend entered railway service as a rate clerk on the Cleveland, Lorain & Wheeling (now part of the Baltimore & Ohio). For a short time previous to his



Oscar Townsend

employment as a rate clerk for the Canadian Pacific at Pittsburgh, Pa., he was engaged in other than railway work and later he was advanced to traveling freight agent. After serving three years in the latter capacity, Mr. Townsend was appointed commercial freight agent on the Chicago, Milwaukee & St. Paul, then entering the service of the Great Western in May, 1910, as assistant general freight agent, with headquarters at St. Paul, Minn. In June, 1921, he was promoted to general freight agent, with headquarters at Chicago, then being further promoted to traffic manager in April, 1924. His election to vice-president became effective on May 6.

James F. Hogan, vice-president of the Chicago & Western Indiana and the Belt Railway of Chicago, with headquarters at Chicago, has been elected vice-president in charge of traffic of the Western Pacific, with headquarters at San Francisco, Cal., effective June 15. Mr. Hogan was born in Chicago in 1881 and has been in railway service for 29 years. His service began as a clerk in the local freight office of the Illinois Central at Chicago. For the following 11 years he filled various positions in the traffic and operating departments of the Illinois Central. In 1911 he became connected with the traffic department of the El Paso & Southwestern (now part of the Southern Pacific), then serving



James F. Hogan

in that department and the operating department as general agent on the Pacific Coast and at Kansas City, Mo., and as assistant superintendent of the Western division at El Paso, Tex., and Douglas, Ariz. Mr. Hogan was promoted to assistant traffic manager, with headquarters at Chicago in 1922 and when that railroad was absorbed by the Southern Pacific in 1925 he became general freight agent of the Chicago, Rock Island & Pacific at Chicago. He was elected vice-president of the Western Indiana and the Belt Railway in 1927.

Albion M. Fenton, who has been elected vice-president in charge of traffic of the Chicago, St. Paul, Minneapolis & Omaha, with headquarters at St. Paul, Minn., and Minneapolis, has been connected with that railway for more than 42 years. He was born at Cresco, Iowa, on January 27, 1869, and entered railway service on April 4, 1886, as a telegraph operator and agent on the Minneapolis, St. Paul & Sault Ste. Marie. The following year he became a telegraph operator on the Omaha. From 1888 to 1910 Mr. Fenton served successively with the Omaha as agent and train dispatcher at various points, as traveling freight and passenger agent at St. Paul,

as general agent at Helena, Mont., and as division freight and passenger agent at Duluth, Minn. In 1906 Mr. Fenton was promoted to assistant general freight agent at Minneapolis, where he



Albion M. Fenton

remained until August, 1916, when he was further promoted to general freight agent, with headquarters at St. Paul. His election to vice-president of the Omaha became effective on June 1.

Financial, Legal and Accounting

W. W. Cox has been appointed assistant comptroller of the Delaware & Hudson, with headquarters at New York.

L. B. da Porte has been appointed acting western counsel of the Northern Pacific, with headquarters at Seattle, Wash.

Donald E. Currier has been appointed comptroller of the Port Isabel & Rio Grande Valley, with headquarters at Brownsville, Tex.

C. M. Scott, local treasurer of the Southern Pacific, with headquarters at San Francisco, Cal., has in addition been appointed treasurer of the Northwestern Pacific.

R. M. Wilson, real estate agent of the New York, New Haven & Hartford, with headquarters at Boston, Mass., has been appointed assistant general real estate agent, with headquarters at the same place. **E. V. McCargy** has been appointed real estate agent, succeeding Mr. Wilson.

Operating

B. A. Danes has been appointed trainmaster on the First division of the Oregon-Washington Railroad & Navigation Company, with headquarters at Portland, Ore.

W. L. Sporleder has been appointed terminal trainmaster of the Erie, with headquarters at Buffalo, N. Y. **J. P. Hogan** has been appointed trainmaster, with the same headquarters.

R. E. Beach has been appointed supervisor of wage schedules of the Southern Pacific, with headquarters at San Francisco, Cal., in charge of labor matters to which he may be assigned.

F. O. Plummer has been appointed superintendent of the Buffalo and Rochester division of the Erie, with headquarters at Buffalo, N. Y., succeeding **W. J. English,** who has been granted a leave of absence.

G. H. Hill, superintendent of the Bellingham division of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Bellingham, Wash., has been transferred to the Chicago and Milwaukee and Northern divisions with headquarters at Milwaukee, Wis.

J. C. Albright, assistant superintendent on the Oregon-Washington Railroad & Navigation Company at Portland, Ore., has been appointed assistant to the general manager, with headquarters at the same point, succeeding **C. G. Sutherland,** who retired on June 1 because of ill health.

R. R. Ketchem has been appointed assistant trainmaster of the Greenbrier & Eastern subdivision of the Hinton division of the Chesapeake & Ohio, with headquarters at G. & E. Junction, W. Va. **G. J. Johnson** has been appointed assistant trainmaster of the Sandy Valley and Elkhorn subdivision of the Ashland division, with headquarters at Jenkins, Ky.

L. L. White, superintendent of the Marion division of the Erie, with headquarters at Huntington, Ind., has been promoted to assistant general manager of the Western district, with headquarters at Youngstown, Ohio. **F. J. Tamplin,** superintendent of the Allegheny and Bradford divisions, with headquarters at Salamanca, N. Y., has been transferred to the Marion division, to succeed Mr. White.

E. K. Lucy has been appointed trainmaster of the Colorado division of the Missouri Pacific, with headquarters at Pueblo, Colo. **F. Rothrock** has been appointed trainmaster of the Hoisington and Great Bend districts of the Colorado division, with headquarters at Hoisington, Kan. **R. E. Allen,** trainmaster of the Eastern division, with headquarters at Jefferson City, Mo., has been transferred to the Colorado division at Pueblo. **W. H. Bailey** has been appointed trainmaster of the Eastern division, succeeding Mr. Allen.

H. J. Bordwell, assistant general manager of the Erie, with headquarters at Hornell, N. Y., has been appointed general manager of the New York district, with headquarters at Jersey City, N. J., succeeding J. M. Condon. **H. R. Adams,** assistant general manager, with headquarters at Youngstown, O., will succeed Mr. Bordwell as assistant general manager at Hornell. **H. E. Wilson** trainmaster with headquarters at Hornell has been appointed superintendent of the Allegheny and Bradford divisions, with headquarters at Salamanca, N. Y. **J. W. Graves,** division engineer at Hornell will succeed Mr. Wilson as trainmaster.

Victor Parvin, superintendent of the Ann Arbor and the Manistique & Lake Superior, with headquarters at Owosso, Mich., has been promoted to general manager with headquarters at Toledo, Ohio. **A. C. Craighead,** senior trainmaster of Owosso, has been promoted to superintendent, with headquarters at the same point, succeeding Mr. Parvin. **Lloyd Burgess,** junior trainmaster at Owosso, has been promoted to senior trainmaster, replacing Mr. Craighead. **W. F. Byerly,** road foreman of engines at Owosso has been promoted to junior trainmaster of the Second and Third divisions, with headquarters at the same point.

Effective June 1 the Louisville, Henderson & St. Louis will be operated as the Owensboro division of the Louisville & Nashville. **R. N. Hudson,** president and general manager of the Louisville, Henderson & St. Louis, has been appointed staff officer of operation of the Louisville & Nashville, with headquarters at Louisville, Ky. He will have jurisdiction over the new division and will perform such duties as may be assigned to him. **J. S. Moorman,** car accountant on the Louisville, Henderson & St. Louis, has been appointed master of trains of the Owensboro division of the Louisville & Nashville, with headquarters at Louisville, Ky.

Traffic

Peter P. Belitz has been appointed general agent of live poultry traffic of the New York Central at Chicago, succeeding **W. H. Fish,** deceased.

C. J. Connolly has been appointed general agent of the freight department of the Delaware & Hudson at Cleveland, Ohio, a newly created agency.

E. S. Hiner, commercial agent for the Clinchfield at Cincinnati, Ohio, has been promoted to general western agent, with headquarters at the same point, effective June 15, succeeding **F. P. McEwen,** who has resigned to engage in other business.

T. L. Darneal, assistant general freight agent on the Missouri-Kansas-Texas at St. Louis, Mo., has been promoted to general freight agent in charge of solicitation, with headquarters at the same point.

Edward Hoagland, division freight agent of the New York Central, with headquarters at Albany, N. Y., has been appointed assistant general freight agent, with headquarters at Buffalo, N. Y., succeeding **G. E. Taylor,** promoted. **L. A. Clapp** will succeed Mr. Hoagland as division freight agent at Albany.

L. L. Hyde, general freight agent of the Lake Erie & Western district of the New York, Chicago & St. Louis, with headquarters at Indianapolis, Ind., retired from active duty at his own request on June 1, after 25 years of service in the traffic departments of the Lake Erie & Western and its successor, the Nickel Plate.

Charles H. Ryan, Jr., assistant general freight agent of the Louisville & Nashville, has been promoted to general freight agent in charge of solicitation, with headquarters as before at Louisville, Ky. **W. E. Chambers,** general freight agent of the Louisville, Henderson & St. Louis, with headquarters at Louisville, has been appointed assistant general freight agent to succeed Mr. Ryan, following the acquirement of that railroad by the Louisville & Nashville on June 1.

Robert H. Miller, who has been appointed general freight agent of the Pennsylvania, with headquarters at Pittsburgh, Pa., (as announced in the *Railway Age* of May 4, page 1085) was born on September 2, 1884, at Mt. Gilead, O. He entered railway service in February, 1904, as office boy and record clerk for the Pennsylvania, at Columbus, O., later in the same year serving as clerk for that road. In November, 1911, Mr. Miller was appointed chief rate clerk in the division freight office at Columbus, and in August, 1916, he became freight solicitor at the same



Robert H. Miller

point. The following year he was appointed assistant chief clerk in the general freight office at Pittsburgh, Pa. He served as chief clerk in the office of the assistant freight traffic manager, at Pittsburgh, and later served in the same capacity in the freight traffic manager's office and in the traffic manager's office. In August, 1925, Mr. Miller was appointed district freight representative and in June, 1926, he was appointed division freight agent at Detroit, Mich. He returned to Pittsburgh in November, 1927, as assistant general freight agent, which position he held at the time of his recent promotion to general freight agent.

William W. Richardson, assistant to the passenger traffic manager of the Pennsylvania, with headquarters at St. Louis, Mo., retired from active duty under the pension regulations of the company on June 1 after nearly 49 years of railway service. Mr. Richardson was born on May 9, 1859, and began his railroad career as a clerk in the motive power department of the Pennsylvania on the Cincinnati division on September 1, 1880. In 1887 he became chief clerk to the superintendent of the Indianapolis division and in 1893 he was transferred to the passenger traffic department at Chicago. He was advanced successively through the positions of traveling passenger agent, district passenger agent and assistant general passenger agent, and in 1912 he was promoted to general passenger agent at Pittsburgh, Pa., where he remained until 1920 when he was again promoted to passenger traffic manager of the Southwestern region of the Pennsylvania. Mr. Richardson had been assistant to the passenger traffic manager since November, 1927.

Engineering, Maintenance of Way and Signaling

Howard E. Boardman, whose appointment as construction engineer of the Boston & Maine, with headquarters at Boston, Mass., was announced in the *Railway Age* of May 25, was graduated from the Sheffield Scientific School, Yale University, in 1899. He entered railway service immediately as instrumentman for the Pennsylvania on preliminary surveys for branch line construction in Central Pennsylvania and New Jersey. From 1901 to 1902 he was assistant on the engineer corps of the same road, lines West of Pittsburgh, working on general maintenance surveys, estimates and plans and later in charge of the construction of a large freight interchange yard at Conway, Pa. He then served successively as assistant engineer and senior assistant engineer on the North River Tunnels of the Pennsylvania. From 1909 to 1912, Mr. Boardman was senior assistant engineer and division engineer in the maintenance of way department of the Missouri Pacific. He was chief assistant engineer of the Buenos Aires Western Railway at Buenos Aires, Argentina, from 1912 to 1916, in charge of the entire layout and construction of four miles of concrete lined electrified railway tunnel under the city of Buenos Aires, with joint underground passenger station. From the latter date until 1923 he was engineering assistant to the general valuation counsel of the New York Central line at New York where he was engaged in making various reports on the work of the valuation department and in making special investigations, reports and other data for submission to the Interstate Commerce Commission. From 1923 until May of this year, Mr. Boardman was engaged in other business. His appointment as construction engineer of the Boston & Maine marks his return to the railroad field.

Frederick E. Schall, whose appointment as consulting bridge engineer of the Lehigh Valley was announced in the May 25 issue of the *Railway Age* was born on December 19, 1857, at Wurtemburg, Germany. He was educated at the Royal Building Trade School, Stuttgart, Germany, which institution he attended from 1873 to 1878. During this period Mr. Schall worked during the summer months on railroad construction. In 1883 he became draftsman in the chief engineer's office of the Lehigh Valley and in 1887 he was appointed draftsman and designer in the bridge department. In 1888 he was promoted to the position of chief draftsman and in 1897 he became assistant engineer in charge of the



Frederick E. Schall

chief engineer's office. He was promoted to bridge engineer in 1899 and held this position continuously until the time of his recent appointment as consulting bridge engineer.

Herbert T. Rights, who has been appointed bridge engineer of the Lehigh Valley, with headquarters at Bethlehem, Pa., was born on April 28, 1874, at Tahlequah, Okla. He was educated at the



Herbert T. Rights

Seminary for Boys, Oklahoma, Preparatory school for Lehigh University, Bethlehem, Pa., and Lehigh University, from which institution he was graduated in 1895. Immediately following his graduation, Mr. Rights entered the serv-

ice of the Lehigh Valley as rodman in the division engineer's office at Bethlehem. He was transferred to the bridge department of the same road in 1896 as draftsman and computer, where he remained until 1898. From the latter date until 1899, Mr. Rights was employed as draftsman by the Berlin Iron Bridge Company, after which he returned to the Lehigh Valley as computer and designer in the bridge department at Bethlehem. From 1900 to 1903 he was bridge inspector for that road, then for two years he served as draftsman for the Phoenix Bridge Company. He was employed by the Shoemaker Bridge Company from 1905 to 1923 as squad master, estimator and assistant engineer, in charge of estimating and designs. He re-entered the service of the Lehigh Valley in 1923 as assistant to the bridge engineer and the following year he was promoted to the position of assistant bridge engineer, in which capacity he served until his recent promotion to the position of bridge engineer.

Purchases and Stores

F. W. Taylor, purchasing agent of the Pacific lines of the Southern Pacific, with headquarters at San Francisco, Cal., has in addition been appointed purchasing agent of the Northwestern Pacific, succeeding **H. W. Ellicott,** who has retired from active service.

Mechanical

C. L. Sengel has been appointed master mechanic of the Owensboro division of the Louisville & Nashville.

Palmer R. Mitchell, general foreman on the Louisville & Nashville at Ravenna, Ky., has been promoted to master mechanic at that point.

J. J. Magimm, master mechanic on the Nickel Plate district of the New York, Chicago & St. Louis at Conneaut, O., has been promoted to superintendent of Motive Power, with headquarters at Cleveland, O.

Special

Ira French has been appointed special representative for the New York, New Haven & Hartford, with headquarters at New York. He will represent Mr. A. P. Russell in matters of public relations and publicity in the State of New York.

Obituary

William J. Manley, assistant to the president of the Pittsburgh & West Virginia, with headquarters at Cleveland, O., died at Pittsburgh, Pa., on May 28.

Ambrose T. Abbott, superintendent of the Iowa division of the Chicago, Rock Island & Pacific, with headquarters at Des Moines, Ia., died at his home in that city on June 2, following a heart attack.

Ernest Williams, chairman of the board of the Norfolk Southern, with headquarters at Norfolk and Lynchburg, Va., who died on May 20, was born on October 21, 1862, at Lynchburg, Va. He was educated in the grammar schools of that city and entered the service of the Norfolk Southern on June 16, 1921, as director and vice-president. On May 19, 1925, he was elected chairman of the board of directors. Mr. Williams was elected president of the Durham & South Carolina on February 22, 1905, and retained this office until his death.

Harry D. Vought, secretary of the New York Railroad Club and the Central Railway Club, died at his home in Montclair, N. J., on June 3. Mr. Vought was born in Buffalo, N. Y., on August 14, 1849. He was educated in the public schools of that city and entered newspaper work in May, 1868. He became city editor of the Buffalo Evening Post in 1872 and from 1876 to 1897 he was reporter, assistant city editor and railroad editor of the Buffalo Courier. He then became railroad editor of the New York Commercial, remaining in that position until 1918, when he retired from active newspaper work. In addition to his newspaper work, Mr. Vought was actively associated with various clubs and organizations. He served for approximately 50 years as secretary and treasurer of the Central Railway Club. He was also secretary of the New York Railroad Club, having served in that capacity continuously since 1903. Since 1907 he was associated with the Master Boiler Makers Association in a smilar capacity.



Harry D. Vought

F. L. Blendinger, former vice-president in charge of the operating department of the Lehigh Valley, who resigned in December, 1927, died at his home in North Plainfield, N. J., on June 2. Mr. Blendinger was born at Little Valley, N. Y., and entered railway service in 1878 as messenger for the Erie. From 1880 to 1898, he served with this road as telegraph operator and in various clerical positions at Cleveland, O., and at New York. From 1898 until 1900, Mr. Blendinger served as chief clerk to the second vice-president in charge of operations of the same road, and from the latter date until January 1902, he was superintendent of telegraph of that road and the seventh district of the Western Union Telegraph Company. From January until June, 1902, he was out of railroad service and at the latter time he re-entered the service of the Lehigh Valley. He served as purchasing agent and superintendent of telegraph from 1907 to 1911, then being appointed assistant to the vice-president in charge of operation, which position he held until May, 1916. At that time he was appointed vice-president in charge of operation, remaining in this position until June, 1918, when he was appointed federal manager for the road with jurisdiction over the Buffalo Creek and the Susquehanna & New York. On March 1, 1920, Mr. Blendinger was again appointed vice-president in charge of operations of the Lehigh Valley, serving in that capacity until December, 1927, when he was forced to resign from that position on account of ill health. Mr. Blendinger also served for a time as general manager of the Buffalo Creek, which is leased by the Lehigh Valley and the Erie.



F. L. Blendinger

* * *



New York Central, Elkhart, Ind.